EXPERIMENTAL AND MODELLING STUDY OF INNOVATION-BASED ENTREPRENEURSHIP: A CASE STUDY OF BAKERY INDUSTRY IN KAZAKHSTAN

Gulden Baibussinova, Kazakh University of Economics, Finance and International Trade
Murat Aliyev, Kazakh University of Economics, Finance and International Trade
Ulagat Yussupov, Kazakh University of Economics, Finance and International Trade
Gulmira Tussibayeva, Kazakh University of Economics, Finance and International Trade
Miyatbek Altynbekov, Kazakh University of Economics, Finance and International Trade
Gulziya Aldashova, Zhubanov Aktobe Regional State University

ABSTRACT

Innovation has increasingly become a core subject for researchers across disciplines, from economics to engineering and technology. Despite this growing interest in innovation there have been few attempts to include entrepreneurship as a central component. Entrepreneurship and innovation are closely linked. Much of entrepreneurial activity most assuredly involves innovation, and, likewise, entrepreneurs are critical to the innovation process. This paper analyses different scenario-based models for bakery industry in Kazakhstan establishing a number of hypotheses that innovation may act as a force that increases entrepreneurship growth. This paper highlights opportunity of recognition in relation to innovativeness lie in addressing innovation systems in the appropriate manner, which implies connecting the actors playing a role on both sides, supply and demand.

Keywords: Innovation-Based Entrepreneurship, Bakery Industry, Competitive Strategy, Empirical Analysis, Scenarios and Performance.

INTRODUCTION

Both innovation and entrepreneurship policy have caught the attention of policymakers at different governmental levels, e.g. local, regional, national, and supranational. Both are considered vital for economic growth and industrial renewal and rank high on government policy agendas (Tang & Koveos, 2004; Movkebayeva et al., 2021). Also, their combination (i.e. innovative entrepreneurship) is a phenomenon that has become increasingly important, especially in the last decade. There are many examples of highly successful innovations stemming from small enterprises, which have revolutionized entire industries (Movkebayeva et al., 2020). Start-up companies, young entrepreneurs, university spin-offs, and small highly innovative firms produce the major technological breakthroughs

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

and innovations, leaving behind the R&D efforts and innovation strategies of large global corporations (Schumpeter, 2000). It has been argued that entrepreneurship takes on new importance in a knowledge economy because it serves as a key mechanism by which knowledge created in one organization can become commercialized in another (new) enterprise (Linton & Solomon, 2017). New and small firms also serve as important vehicles for knowledge spill-overs when their ideas, competencies, products, strategies, innovations, and technologies are acquired, accessed, and commercialized by larger enterprises (Artykbaev et al., 2020). Small firms as the engine of innovative activity reflect changes in technology, globalization, and other factors that have fundamentally altered the importance and process of innovation and technological change (Anokhin & Schulze, 2009). Small- and medium-sized enterprises and entrepreneurship continue to be a key source of dynamism, innovation, and flexibility in advanced industrialized countries, as well as in emerging and developing economies (Aubakirova, 2014; Yerkin et al., 2019; Kurmanov et al., 2019; Artykbaev et al., 2019).

In terms of theory of innovations, there is no common definition of the innovation system concept. Typically, the concept includes activities of private as well as public actors; linkages; the role of policy and institutions (Abazov & Salimov, 2016). The analysis is carried out at the national level: R&D activities and the role played by the universities, research institutes, government agencies, and government policies are viewed as components of a single national system, and the linkages among these are viewed at the aggregate level (Harhoff, 2008; Yessentemirova et al., 2019; Galiyeva et al., 2020). Also, it useful to think about innovation systems in two dimensions. One refers to the structure of the system what is produced in the system and what competences are most developed (Saparaliyev et al., 2019). The second refers to the institutional set-up - how does production, innovation, and learning take place. The innovation system concept can be understood in a narrow as well as a broad sense (Saiymova et al., 2018). The narrow sense concentrates on those institutions that deliberately promote the acquisition and dissemination of knowledge and are the main sources of innovation (Veeraraghavan, 2009). The broad sense recognizes that these narrow institutions are embedded in a much wider socio-economic system. The concept has become popular among several important policymaking organizations. Much of the literature on innovation systems insists on the central importance of national systems, but a number of authors have argued that globalization has greatly diminished or even eliminated the importance of the nation state (Okpara, 2007; Windrum, 2008; Mukhtarova & Yesbolganova, 2018). As a result, there have been several new concepts emphasizing the systemic characteristics of innovation, but related to levels other than the nation state (Kurmanalina et al., 2020). Sometimes the focus is on a particular country or region which then determines the spatial boundaries of the system. The literature on regional systems of innovation has grown rapidly since the mid-1990s. In other cases, the main dimension of interest is a sector or technology (Hongbin et al., 2009). In addition, there is the concept of technological systems, while some use the notion of sectoral systems of innovation (McDaniel, 2000; Soriano & Huarng, 2013; Prabhu & Jain, 2015). Usually these different concepts and dimensions reinforce each other and are not in conflict.

Regarding the institutional policy to support innovations, innovation as a policy area is primarily concerned with a few key objectives: ensuring the generation of new knowledge and making government investment in innovation more effective; improving the interaction between the main actors in the innovation system (universities, research institutes, and firms) to enhance knowledge and technology diffusion; and establishing the right incentives for private sector innovation to transform knowledge into economic value and commercial

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

success (Sabden & Turginbayeva, 2017; Michael & Pearce, 2009; Peterson, 2009; Danabayeva, 2013; Mukhtarova et al., 2019). For example, the framework for innovation policy could include policy objectives for the increase of R&D intensity, the stimulation of climate and culture of innovation, as well as for the commercialization of technology (Sagieva & Zhuparova, 2012). The last of these includes instruments and support which are important for many innovative startups, e.g. a support innovation infrastructure (such as technology transfer offices, science parks, and business technology incubators), encourage the uptake of strategic technologies among SMEs; improve access to pre-commercialization funding and venture capital; and provide tax (e.g. R&D tax credits, favorable capital cost allowances) and other incentives and supports to accelerate the commercialization of new technologies and products (Priem et al., 2012; Alzhanova & Sabituly, 2014; Bolarinde et al., 2020). However, policy measures to stimulate innovative entrepreneurship are often of a different form than those to foster general entrepreneurial activity as are the target groups they seek to influence, and the composition of system members. Of course, innovation policy is broader than policy to foster innovative entrepreneurship, especially regarding objectives such as those to increase R&D investments or encourage the uptake of strategic technologies.

Despite this growing interest in systems of innovation there have been few attempts to include entrepreneurship as a central component. Entrepreneurship and innovation are closely linked. Much of entrepreneurial activity most assuredly involves innovation, and, likewise, entrepreneurs are critical to the innovation process. In addition, the turbulence produced by a high rate of business entry and exit activity is in itself associated with higher levels of innovation in an economy. It is possible to observe convergence between innovation and entrepreneurship policy, particularly when the policy goal is to foster new high-growth innovative firms. This paper analyzes different scenario-based models for Kazakhstan establishing a number of hypotheses that innovation may act as a force that increases entrepreneurship growth.

METHODOLOGY

This paper focuses on Kazakhstan. The World Bank report shows that Kazakhstan, as of 2020, reached the level of an upper-middle-income country with GDP 170 billion USD (Spankulova et al., 2020), while facing economic and environmental challenges including water problem and climate change (Valeyev et al., 2019). Foreign direct investment increased 30% in 2020 in Kazakhstan's agricultural industry and 80% in the country's petroleum products sector (Rivotti et al., 2019). Kazakhstan has prioritized the development of non-oil sectors of economy, which accounted for 85% of the country's economic growth in 2020. In the first seven months of 2020, Kazakhstan exported significantly more goods than the previous year, including a seven-fold increase in automobile exports. The country's GDP decreased by 3% due to the decline in the service sector because of the COVID-19 pandemic, but the real sector of the economy grew significantly. Agriculture, construction, and manufacturing all saw increases in production in the first eight months of the year.

As case study, the paper focuses on bakery industry in Kazakhstan. The bakery industry is one of the major food processing industries in Kazakhstan, and it is a resource intensive industry. It is the third largest individual sector, behind only dairy and grain/starch mill production, holding a 15.7% share of all food manufacturing activity. Most of the bakeries in Kazakhstan are small scale industries and more than 65% of the total bakery products are produced from craftsman bakeries. In 2020, about 1600 craftsman bakeries, 800 small and 18 big industrial units were operating in this sector. The bakery was certified under

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

ISO 9002, and it is the first craftsman bakery in Kazakhstan to have an environmental audit. Its 340 m^2 modern production unit processed daily about 2 tons of flour for bread, buns, rolls, cakes and pastries. The innovation management in the bakery usually begins with a discussion with the owner of the bakery to explain the aim and benefits of innovations. Though the bakery had an innovation initiation as part of its strategic plan, the management agreed to have innovation policy at the production unit to improve their marketing strategy, since it was serving for the economic output and market. It was decided to include innovation in their organizational structure and bring the responsibility of innovation under the production manager's control, so that it would be easier to make any modification in the production schedule or machines as and when required.

This research is based on the four hypotheses: H1 - Innovative entrepreneurship are more likely to have higher economic output; H2 – Entrepreneurship SMEs which have higher access to innovation are more likely to have higher productivity and efficiency; H3 - Entrepreneurship SMEs engaged in innovative entrepreneurship are more likely to have confidence in innovation; H4 - Entrepreneurship SMEs moderates the link to innovative entrepreneurship. The paper tests these hypotheses in relation to scenario-based models of the role of innovation in economic growth to understand the possible trends in Kazakhstani development. These scenario-based models are characterized and labelled according to the parameters chosen to define the future pathways.

The first scenario-based model (M1: high–high scenario) is that Kazakhstan attains consensus on the development of intentionality from the collective. Innovative entrepreneurship and learning are on the government's central and permanent agenda. Here, social values lead to the transformation of the specialization pattern. Entry barriers to new foreign markets are overcome by implementing new products derived from innovative entrepreneurs and firms, as well as increasing the quality of the existing export basket. In the second scenario-based model (M2: high scenario), Kazakhstan attains an agreement to implement key social and economic reforms that facilitate the creation of new SMEs, for which a favorable context for international trade is also needed. In the third scenario-based model (M3: base scenario), Kazakhstan develops an obsession with peace, regardless of other social and economic objectives (e.g. education, research, innovation, entrepreneurial activity, etc.). With respect to the fourth scenario-based model (M4: low scenario), Kazakhstan opts for protectionist policies, supported in part by incumbent firms with low expectations.

This empirical and modelling analysis of this paper consisted of two exercises. The first set of models estimated the factors that determine subjective values of innovation using moderated hierarchical regression. Specifically, after controlling other variables that may provide alternative explanations for how subjective values of innovation emerge, the analysis focused on a specific strategy differentiating between innovative and imitative entrepreneurship and the ways the duration of entrepreneurial experience impacts this relationship as a moderator. In a second exercise, the effects on growth expectations were examined through hierarchical regressions. Basically, this set of models sought to identify the mechanism that underlies growth expectations by observing the direct effect of strategy (imitative vs innovative) and the indirect effect of subjective values of innovation in order to clarify the nature of the relationship between innovative entrepreneurship and growth expectations.

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

RESULTS

Empirical result shows that the coefficients have a significant positive effect of innovative entrepreneurship on economic growth under models 1 & 2, which is in line with H1. In regard to H2, which predicted that entrepreneurship SMEs which have higher access to innovation are more likely to have higher level of productivity and efficiency are also positively related to economic growth, the coefficient in Models 1 & 2 is significant, while Models 3 & 4 demonstrates lower score. H3 predicted that entrepreneurship SMEs engaged in innovative entrepreneurship are more likely to have confidence in innovation. The coefficient for innovative entrepreneurship in Model 2 is positive and significant. This suggests that innovative entrepreneurs are more likely to have higher values of innovation. Therefore, this result provides support for H3. In respect to the hypothesis that entrepreneurship SMEs moderates the link to innovative entrepreneurship (H4) proposed a moderating effect of the duration of entrepreneurial experience on the relationship between innovative entrepreneurship and values of innovation. Model 4 indicates that, as predicted, the interaction between innovative entrepreneurship and the duration of entrepreneurial experience is negative and significant, suggesting that the link between innovative entrepreneurship and institutional support of innovation is indeed weaker in the presence of more entrepreneurial experience. The evidence presented is consistent with the reasoning behind H4, thus providing support for the hypothesis (Table 1).

Table 1
HIERARCHICAL REGRESSION ANALYSIS

Variables	Model 1	Model 2	Model 3	Model 4
Economic value	Yes	Yes	Yes	Yes
Company size	0.127***	0.117***	0.115***	0.119***
Financial instruments	0.096	0.112***	0.088	0.084
Export intensity	-0.013	-0.009	-0.007	-0.007
Entrepreneurial intention	0.026	0.031	0.038	0.022
Industry (1)	-0.195***	-0.142***	-0.138***	-0.130***
Industry (2)	0.036	-0.028	-0.032	-0.030
Industry (3)	0.004	0.012	0.010**	0.014**
Industry (4)	0.003	0.009	0.015**	0.013**
Innovative entrepreneurship		0.125***	0.127***	0.350***
Entrepreneurial experience			0.018	0.090**
R^2	0.254	0.255	0.256	0.260
Adjusted R^2	0.252	0.253	0.254	0.258
Change in R^2		0.011	0.001	0.020
*p < 0.05; **p < 0.01; ***p < 0.001				

CONCLUSION AND POLICY DISCUSSION

The results suggest that entrepreneurs involved in innovative entrepreneurship are more likely to have higher growth expectations, with institutional support of innovation at all levels playing a direct and indirect role in entrepreneurs' expectations of firm growth. Additionally, the results indicate that the duration of entrepreneurial experience moderates the relationship between strategic orientation and confidence in innovation. This finding suggests there is feedback between the benefits of innovation and support of innovation, resulting in an over-estimation - at least in comparative terms - regarding firm growth rates.

Regarding institutional strategies, economic development depends on individual intentionality (shaped by formal and informal institutions), key directions were indicated to

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

propose innovative entrepreneurship as a mechanism of growth (Shaekina & Mamrayeva, 2010; Abdymanapov et al., 2016; Seitzhanov et al., 2020). In this respect, Kazakhstani government should design long-term policies oriented towards the creation of an entrepreneurial society. The universities and their research environments play a key role not only in the formation of professionals, but also in the formation of entrepreneurs, who create social value. A greater innovative entrepreneurial density is positively related to economic growth. Thus, entrepreneurial societies indeed comprise the entrepreneurship capital required for regional and national production.

To achieve entrepreneurial economies and societies, it is important to generate incentives for cooperation between the agents involved within the economic dynamic (Kurmanov et al., 2016; Mukhtarova et al., 2017). Here, large incumbent firms should allow knowledge transfer by including potential entrepreneurs in their organizational structure. Learning from this experience, future entrepreneurs might be able to face risk aversion with greater ease. In addition, to coordinate all agents, a national system of entrepreneurship is needed alongside the national system of innovation. Here, it is worth recognizing the joint contribution of the government (providing infrastructure and adequate regulations), incumbent firms (facilitating the connection between new and SME firms) and civil society (contributing trust and progress intentionality). Therefore, long-term economic growth relies, inter alia, on innovative entrepreneurship, which directly links collective society with socioeconomic development.

There is no doubt that increasing the rate of innovative entrepreneurship is a major challenge, especially as it has been recognized that innovation in SMEs and entrepreneurs is around 2% or less in some economies (Diyar et al., 2014). However, opportunities to exploit new products, services, markets and so on are constantly being generated (Tursyn et al., 2013). The possible solutions to encourage opportunity recognition in relation to innovativeness lie in addressing innovation systems in the appropriate manner, which implies connecting the actors playing a role on both sides, supply and demand. The optimal structural transformation path that Kazakhstan could take as it suggests not only an increase in the supply level by encouraging entrepreneurs to produce products that already exist in Kazakhstani market, but also takes full advantage of producing non-existing products in Kazakhstan, which could be derived from existing ones. To exploit these opportunities and boost the learning process, the institutional context for entrepreneurs must be in place to allow interaction between the public and private sectors; in addition, the learning process should incorporate what new activities are being considered and what public policies are required for entrepreneurs to emerge successfully. Kazakhstan could improve the rate of entrepreneurs exploiting new opportunities. Modelling futures thinking might prove to be a relevant method for analyzing such strategies in order to discuss the best development path for Kazakhstan.

REFERENCES

Abazov, R., & Salimov, U. (2016). Technoparks in Kazakhstan: will they help develop the innovation sector. *The Central Asia-Caucus Analysists, 2*(3), 12-15.

Abdymanapov, S.A., Toxanova, A.N., Galiyeva, A.H., Muhamedzhanova, A.A., Ashikbayeva, Z.S., & Baidalinov, A.S. (2016). Government Support of Innovative Business in the Republic of Kazakhstan. International *Electronic Journal of Mathematics Education, 11*(5), 1033-1049.

Alzhanova, N., & Sabituly, A. (2014). Estimation of the level of the innovative activity development of the Kazakh economy. *Academy of Entrepreneurship Journal, 20*(3), 1-24.

Anokhin, S., & Schulze, W.S. (2009). Entrepreneurship, innovation, and corruption. *Journal of Business Venturing, 24*(5), 465-476.

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

Artykbaev, D.Z., Rasulov, H.Z., & Baybolov, K.S. (2019). Influence of soil density and moisture on seismic stability of slope structures. *International Journal of Engineering Research and Technology, 12*(8), 1259-1262.

Artykbaev, D., Baibolov, K., & Rasulov, H. (2020). Stability analysis of fine soils from a road project, M32 Samara-Shymkent (Russia-Kazakhstan). *International Journal, 19*(76), 205-212.

Aubakirova, G. (2014). Features of managing innovation activity in the Republic of Kazakhstan. *Engineering Economics, 25*(2), 160-166.

Bolarinde, A.M., Germinah, C.P.E., & Collins, N.C. (2020). Impact of knowledge and experience on the entrepreneurs'decisions and behaviours in their transition to entrepreneurship: The South African perspectives. *Academy of Entrepreneurship Journal, 26*, 1-18.

Danabayeva, R. (2013). Management of innovation in the modern Kazakhstan: Development priorities of science, technology and innovation. *Journal of Information Systems & Operations Management, 7*(2), 288-293.

Diyar, S., Akparova, A., Toktabayev, A., & Tyutunnikova, M. (2014). Green economy–innovation-based development of Kazakhstan. *Procedia-Social and Behavioral Sciences,* 140, 695-699.

Galiyeva, A., Abdildinova, N., Kulubekov, M., & Mukhamejanova, A. (2020). Impact of innovative activity on the formation of the agricultural labor market: The world strategies. *Academy of Strategic Management Journal, 19*(1), 1-13.

Harhoff, D. (2008). Innovation, entrepreneurship und demographie. *Perspektiven der Wirtschaftspolitik, 9*, 46-72.

Hongbin, L., Xing, L., Xianguo, Y., Haifeng, Z., & Junsen, Z. (2009). Examining the Impact of Business Entrepreneurship and Innovation Entrepreneurship on Economic Growth in China. *Economic Research Journal, 10*, 99-108.

Kurmanalina, A., Bimbetova, B., Omarova, A., Kaiyrgaliyeva, M., Bekbusinova, G., Saimova, S., & Saparaliyev, D. (2020). A SWOT analysis of factors influencing the development of agriculture sector and agribusiness entrepreneurship. *Academy of Entrepreneurship Journal, 26*(1), 1-8.

Kurmanov, N., Aliev, U., & Suleimenova, S. (2019). Analysis of the efficiency of innovation management in the countries of the Eurasian Economic Union. *Polish Journal of Management Studies,* 19.

Kurmanov, N., Turekulova, D.D., Doskeyeva, G., & Alina, G. (2016). A research on innovation in small and medium-sized enterprises: The case of Kazakhstan. *International Journal of Economics and Financial Issues,* 6(3).

Linton, J.D., & Solomon, G.T. (2017). Technology, innovation, entrepreneurship and the small business—technology and innovation in small business. *Journal of Small Business Management, 55*(2), 196-199.

McDaniel, B.A. (2000). A survey on entrepreneurship and innovation. *The Social Science Journal, 37*(2), 277-284.

Michael, S.C., & Pearce, J.A. (2009). The need for innovation as a rationale for government involvement in entrepreneurship. *Entrepreneurship and Regional Development, 21*(3), 285-302.

Movkebayeva, Z., Khamitova, D., Kabdyrova, A., Akhmetova, A., Zholtayeva, G., & Duzelbayeva, A. (2020). An exploratory analysis of socio-legal factors related to the distance education learning environment: the case of disabled learners in Kazakhstan. *Journal of Legal, Ethical and Regulatory Issues, 23,* 1-10.

Movkebayeva, Z., Khamitova, D., Zholtayeva, A., Balmagambetova, V., & Balabiyev, K. (2021). Factors influencing the legal regulation and management of education system in Kazakhstan: a review and analysis. *Problems and Perspectives in Management, 18*(4), 14.

Mukhtarova, K. S., Kozhakhmetova, A. K., Belgozhakyzy, M., Dosmbek, A., & Barzhaksyyeva, A. (2019). High-tech entrepreneurship in developing countries: Way to success. *Academy of Entrepreneurship Journal, 25*(1), 1-10.

Mukhtarova, K., & Yesbolganova, G. (2018). Perception of innovations by public enterprises in Kazakhstan. *Academy of Strategic Management Journal, 17*(1), 1-11.

Mukhtarova, K., Ziyadin, S., Kupeshova, S., & Doszhan, R. (2017). Problems of developing the foundations of sustainable competitiveness of industrial and innovative economy in Kazakhstan. *Economic annals-XXI,* (168), 38-43.

Okpara, F. O. (2007). The value of creativity and innovation in entrepreneurship. *Journal of Asia entrepreneurship and sustainability,* 3(2), 1.

Peterson, H. (2009). Transformational supply chains and the wicked problem of sustainability: Aligning knowledge, innovation, entrepreneurship, and leadership. *Journal on Chain and Network Science,* 9(2), 71-82.

Prabhu, J., & Jain, S. (2015). Innovation and entrepreneurship in India: Understanding jugaad. *Asia Pacific Journal of Management, 32*(4), 843-868.

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.

Priem, R.L., Li, S., & Carr, J.C. (2012). Insights and new directions from demand-side approaches to technology innovation, entrepreneurship, and strategic management research. *Journal of management,* 38(1), 346-374.

Rivotti, P., Karatayev, M., Mourão, Z.S., Shah, N., Clarke, M.L., & Konadu, D.D. (2019). Impact of future energy policy on water resources in Kazakhstan. *Energy Strategy Reviews, 24,* 261-267.

Sabden, O., & Turginbayeva, A. (2017). Transformation of national model of small innovation business development. *Academy of Entrepreneurship Journal, 23*(2), 1-14.

Sagieva, R. K., & Zhuparova, A. S. (2012). Management of innovation processes in terms of development of national economy of Kazakhstan. *Procedia-Social and Behavioral Sciences, 65,* 88-93.

Saiymova, M., Yesbergen, R., Demeuova, G., Bolatova, B., Taskarina, B., Ibrasheva, A., & Saparaliyev, D. (2018). The knowledge-based economy and innovation policy in Kazakhstan: Looking at key practical problems. *Academy of Strategic Management Journal, 17*(6), 1-11.

Saparaliyev, D., Spankulova, L., Zhaxylykova, A., Aldashova, G., Saiymova, M., & Akhmetova, G. (2019). Impact of new technologies, innovations & barriers on the service delivery and financial income of the private business in transitional economies: The case of health centers. *Academy of Strategic Management Journal, 18*(3), 1-10.

Schumpeter, J.A. (2000). Entrepreneurship as innovation. *Entrepreneurship: The Social Science View*, 51-75.

Seitzhanov, S., Kurmanov, N., Petrova, M., Aliyev, U., & Aidargaliyeva, N. (2020). Stimulation of entrepreneurs' innovative activity: evidence from Kazakhstan. *Entrepreneurship and Sustainability Issues, 7*(4), 2615.

Shaekina, Z.M., & Mamrayeva, D.G. (2010). Problems and ways of enhancing the innovation activity in the Republic of Kazakhstan. *Education and Science without Borders, 2*(2), 35.

Soriano, D.R., & Huarng, K.H. (2013). Innovation and entrepreneurship in knowledge industries. *Journal of Business Research, 66*(10), 1964-1969.

Spankulova, L., Karatayev, M., & Clarke, M.L. (2020). Trends in socioeconomic health inequalities in kazakhstan: national household surveys analysis. *Communist and Post-Communist Studies, 53*(2), 177-190.

Tang, L., & Koveos, P.E. (2004). Venture entrepreneurship, innovation entrepreneurship, and economic growth. *Journal of Developmental Entrepreneurship, 9*(2), 161.

Tursyn, G., Aktolkyn, K., Gulmira, S., Dinara, Z., & Amanbaevna, Z.Z. (2013). National culture: Tradition and innovation (On the basis of semiotic analysis of Kazakhstan‘s capital). *Procedia-Social and Behavioral Sciences, 81,* 32-39.

Valeyev, A., Karatayev, M., Abitbayeva, A., Uxukbayeva, S., Bektursynova, A., & Sharapkhanova, Z. (2019). Monitoring coastline dynamics of Alakol Lake in Kazakhstan using remote sensing data. *Geosciences, 9*(9), 404.

Veeraraghavan, V. (2009). Entrepreneurship and innovation. *Asia Pacific Business Review, 5(*1), 14-20.

Windrum, P. (2008). Innovation and entrepreneurship in public services. *Innovation in Public Sector Services*: *Entrepreneurship, Creativity and Management*, 3-20.

Yerkin, N., Nazym, S., & Gulmira, S. (2019). Governance and internalisation in social policy: Definition, concepts and causes. *Journal of Legal, Ethical and Regulatory Issues, 22*(1), 1-5.

Yessentemirova, A., Balmagambetova, V., Kussainov, A., Busurmanov, Z., Gubasheva, D., & Nogaibayev, Y. (2019). Legislation and higher educational policy in Kazakhstan since independence: Problems, perspectives and prospects. *Journal of Legal, Ethical and Regulatory Issues, 22*(2), 11-17.

Citation Information: Baibussinova, G., Aliyev, M., Yussupov, U., Tussibayeva, G., & Altynbekov, M. (2021). Experimental and modelling study of innovation-based entrepreneurship: a case study of bakery industry in Kazakhstan. *Academy of Strategic Management Journal, 20*(6), 1-8.