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External labor migration from Ukraine: causes, scale, consequences

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Purpose – to study the causes and consequences of migration processes.

The results of the study. This article presents the results of an analysis of the dynamics and current state of labor migration processes in Ukraine. The authors evaluated the impact of international labor migration on the country's economy. The causes of labor migration, its positive and negative consequences are characterized. This study examines and summarizes the global experience in regulating external migration flows to foreign countries. The authors suggested directions for improving the system of regulation of external labor migration, as well as measures to promote on its of use as an important element of economic development based on the analysis.

Practical implications. The results of this paper can become the basis for the formation of migration policy of Ukraine according with European standards.

Originality/Value. This paper is expanded of the concept of the main directions and the principles of state migration policy, which the government of Ukraine must adhere to when forming it, has been.

Research limitations/Future research. It is advisable to direct further research towards a quantitative analysis of the composition, structure and national characteristics of labor migrants.

Paper type – empirical.

Keywords: foreign workers; labour imports; labour exporters; discrimination.

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Зовнішня трудова міграція з України: причини, масштаби, наслідки

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Мета роботи – вивити причин і наслідки міграційних процесів в Україні.

Результати дослідження. Проведено аналіз міграційних процесів в Україні. Представлено результати аналізу динаміки і сучасного стану трудових міграційних процесів. Оцінено вплив міжнародної трудової міграції на економіку країни. Охарактеризовано причини трудової міграції, її позитивні і негативні наслідки. Розглянуто і узагальнено світовий досвід регулювання зовнішніх міграційних потоків в зарубіжні країни. На основі представленого аналізу запропоновано напрями удосконалення системи регулювання зовнішньої трудової міграції, а також заходи, що сприяють використанню міжнародної трудової міграції в якості важливого елемента економічного розвитку.

Практичне значення дослідження. Результати цього дослідження можуть стати основою для формування міграційної політики України за європейськими стандартами.

Оригінальність/Цінність/Наукова новизна дослідження. Розширено уявлення про основні напрямки та принципи державної міграційної політики, яких має дотримуватися уряд України під час її формування.

Обмеження дослідження/Перспективи подальших досліджень. Подальші дослідження доцільно скерувати у бік кількісного аналізу складу, структури та національних особливостей трудових мігрантів.

Тип статті – емпіричний.

Ключові слова: іноземні робітники; імпорт робочої сили; експортери робочої сили; дискримінація.

Внешняя трудовая миграция из Украины: причины, масштабы, последствия

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Цель работы – изучить причины и последствия миграционных процессов в Украине.

Результаты исследования. Проведен анализ миграционных процессов в Украине. Представлены результаты анализа динамики и современного состояния трудовых миграционных процессов. Оценено влияние международной трудовой миграции на экономику страны. Охарактеризованы причины трудовой миграции, ее положительные и отрицательные последствия. Рассмотрен и обобщен мировой опыт регулирования внешних миграционных потоков в зарубежные страны. На основе представленного анализа предложены направления совершенствования системы регулирования внешней трудовой миграции, а также меры, способствующие использованию международной трудовой миграции в качестве важного элемента экономического развития.

Практическое значение исследования. Результаты этого исследования могут стать основой для формирования миграционной политики Украины по европейским стандартам.

Оригинальность/Ценность/Научная новизна исследования. Расширено представление об основных направлениях и принципах государственной миграционной политики, которых должна придерживаться правительство Украины при её формировании.

Ограничение исследования/Перспективы дальнейших исследований. Дальнейшие исследования целесообразно направить в сторону количественного анализа состава, структуры и национальных особенностей трудовых мигрантов.

Тип статьи – эмпирический.

Ключевые слова: иностранные работники; импорт рабочей силы; экспортеры рабочей силы; дискриминация.

1. Introduction

Recently, with increasing level of work force traffic the topic of labor migration has become relevant again in Ukraine. However, most of publications related to migration trends have negative trace. Reading the headlines about more than 1.5 million Ukrainians in Poland and forecasts that reflect the tendencies of recent years for the future, it could be get the impression that Ukraine will soon have no working-age population and will collapse.

2. Theoretical background

The problem of external labor migration attracted attention from time to time in different countries. For example, *D. Bearce and A. Hart* (*2017*) used a new measure of immigration policy and examining thirty-six advanced industrial countries between 1996 and 2012 and tried to explain systematically the variation in external labor openness among the more advanced democracies as primary destination countries, using a model where the government feels political pressure through both a voter/electoral channel and a special-interests channel.

There is also very interesting work of *R. Smit* (*2001*) that is based on qualitative research focusing on the impact of the migrant labor system on the family life of Black South Africans, in terms of both the marital and parental relationships. Rather than focusing only on the negative impact of labor migration on the relationships in African families, such as the experience of marital and familial dissolution and breakdown, the research also sheds light on the way in which these families utilize cultural values and survival strategies to ensure that the oscillating nature of the immigrant labor system does not completely uproot them from their traditional way of life.

The problem of external labor migration is complex and covers different layers. According to famous researcher of this issue *O. Stark* (*1995*), the implementation of the theory of labor migration under asymmetric information shows that return migration arises from the reinstatement of informational symmetry which induces low-skill workers, who are no longer pooled with high-skill workers, to return. The author made a conclusion that when workers in an occupation constitute more than two skill levels the following patterns emerge: “Migration is sequential, that is, it proceeds in waves. Each wave breaks into workers who return and workers who stay; within waves the returning migrants are the low-skill workers. The average skill level of migrants is rising in the order of their wave”.

French authors *C. Détang-Dessendre, M. Partridge and V. Piguet* (*2016*) conducted extended research using a host of novel identification approaches and French employment zone data dating back to the early 1980s. They investigated whether these changes corresponded to economic migration that would increase labor market flexibility. Their results detect surprising amounts of economic migration in that most new jobs are eventually taken by new migrants or outside commuters. The authors then reconcile these somewhat surprising findings with the still relatively low contemporary French interregional gross migration rates, concluding that other structural impediments besides relative local labor market inflexibility are behind relatively poor labor market performance. In general, they make a conclusion that local labor markets are most flexible and aggregate natural unemployment is reduced when there is sufficient interregional economic migration to ensure that workers are reallocated from declining to expanding regions. Local European labor markets have generally been viewed as not as flexible as those in North America, leading to greater fluctuations in local wages, labor force participation and unemployment rates, and smaller changes in local employment as economic shocks are primarily experienced by the local area's original residents.

Thus there were many authors who researched issue of external labor migration, but because of country differences related to politic, economic, social and historical specifics of development, this problem is still very relevant and needs deeper observations.

3. Problem statement

The purpose of the article is to study the causes and consequences of external labor migration from Ukraine.

4. Methods and Data

The article applies different methods for research including mathematical modelling, technical and economic analysis as well as expert assessments. Authors used number of international and Ukrainian official resources for statistic data panels including World Bank, United Nations and State Statictics Service of Ukraine.

4. Results

In different resources it is possible to meet several definitions of term “migration policy”. For instance, it is defined as “a government’s statements of what it intends to do or not do (including laws, regulations, decisions or orders) in regards to the selection, admission, settlement and deportation of foreign citizens residing in the country” (*Bjerre, Helbling, Römer, & Zobel, 2015*). In general, an object of migration policy is territorial movement of the population, so it is a purposeful activity of the state on regulation and control of migratory processes and set of means for its realization and achievement. The subjects of external migration processes include citizens crossing the state border.

International labor migration is based on the opportunities, conditions and aspirations of the able-bodied economically active population to work in any region, countries of the world community in order to meet their living needs.

One of the main motives for emigration is still the higher level of wages in the countries of arrival. One of the main motivations for migration is the high level of wages in the countries of arrival. The goal of interstate movement of labor potential-the desire to improve the material condition-remains unchanged in the long historical perspective (*Onyshchuk & Zubar, 2018*).

World experience shows that labor migration provides undoubted obstacles to both the countries receiving labor and the countries that supply it. At the same time, international labor migration generates acute social and economic problems.

However, let us consider at first the positive consequences of this phenomenon. The receiving countries (recipient countries) obtain the following benefits:

– due to the reduction of production costs, the competitiveness of domestic goods increases, which is associated with a lower price of foreign labor, which, in turn, affects the cost of production;
– foreign workers, presenting additional demand for goods and services, stimulate the growth of production and additional employment in the host country;
– import of skilled workforce saves the cost for education and training of local people;
– foreign workers are often seen as a certain shock absorber in the event of crisis and unemployment, as the first to fall under the exemption;
– foreign workers are not provided with pensions and are not taken into account in the implementation of various social programs (*Berbenets, 2012*).

But the import of labor has also a " downside" which include additional competition in the local labor market that leads to an increase in unemployment level. In addition, mass immigration is always accompanied by an increase in social tension in society, conflicts on racial, national and regional grounds, an increase in crime and other negative phenomena.

It should also be noted that foreign workers tend to experience various forms of discrimination in the importing country, ranging from conditions of employment, wages and ending with the terms of health care and insurance.

Labor-exporting countries (donor countries) have also positive and negative sides. The advantages include the following factors:

– labor exports are an important source of flow of freely convertible currency (FCC) into the country;
– export of labor reduces the pressure of workforce surplus in the local labor market and, accordingly, social tension in the country;
– labor exporting country obtains free training of the labor force in new professional skills and familiarity with the advanced labor organization.

At the same time, labor exporting countries face certain negative consequences. The main one is the "brain drain", that is the emigration of highly qualified, initiative personnel, so necessary for the national economy.

Also the illegal status of Ukrainians abroad reduces the price of their labor, creates conditions for numerous abuses, forms in the minds of employers of the importing countries the idea that Ukraine is poor and undeveloped state.

Moreover, illegal labor migration does not bring income to the state or replenish social funds as well as complicates mutual settlements with other states on this issue.

Different sources of information point out the following trends of external migration of Ukraine.

The State Statics Service of Ukraine published the last report showing external migration at the level of 30 million (*Table 1*).

But, the real scale of labor migration is greater than the state statistics service estimated. It did not take into account long-term migrants who left as a family and did not return to Ukraine at the time of the analysis, as well as "pendulum" migrants who have labor relations or lead a household in Ukraine and periodically work abroad.

Table 1

Dynamics of internal and external migration of Ukraine for 2000-2018, thousand people*

Year	External migration (thousand)			External migration (growth)		
	arrived	departed	balance	arrived	departed	balance
2000	53,7	100,3	-46,6			
2002	42,5	76,3	-33,8	-20,9%	-23,9%	-27,5%
2004	38,6	46,2	-7,6	-9,2%	-39,4%	-77,5%
2006	44,2	30	14,2	14,5%	-35,1%	-286,8%
2008	37,3	22,4	14,9	-15,6%	-25,3%	4,9%
2010	30,8	14,7	16,1	-17,4%	-34,4%	8,1%
2011	31,7	14,6	17,1	2,9%	-0,7%	6,2%
2012	76,4	14,5	61,9	141,0%	-0,7%	262,0%
2013	54,1	22,2	31,9	-29,2%	53,1%	-48,5%
2014	12,6	12,1	0,5	-76,7%	-45,5%	-98,4%
2015	30,7	21,4	9,3	143,7%	76,9%	1760,0%
2016	14,3	6,5	7,8	-53,4%	-69,6%	-16,1%
2017	31,4	22,2	9,2	119,6%	241,5%	17,9%
2018	37,3	29,6	7,7	18,8%	33,3%	-16,3%

*Source: compiled by Authors based on (*State Staitstics Service of Ukraine, 2019*).

UN data show that the number of Ukrainians abroad is constantly increasing, and the number of foreigners who live in Ukraine remains at the same level (*Fig.1*). However, since the majority of citizens do not always go abroad to work officially, the discrepancy between statistic and last Estimates strongly indicates the need to strengthen the state's attention to this problem (*The great migration: no one in Ukraine knows how many of our compatriots have moved abroad, 2018*). Unfortunately, there is no official information about the actual number of Ukrainian citizens who are temporarily abroad, about the purpose and grounds for their departure today; there is also no sufficient legislative framework for the protection of our fellow citizens abroad; there are no administrative bodies that would provide such protection.

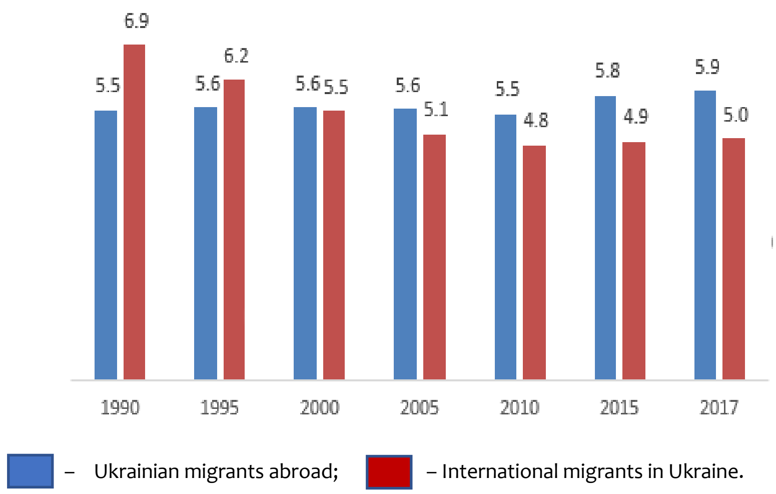

Fig. 1. Number of migrants according to the UN, million people*

*Source: compiled by Authors based on statistical data (*The great migration: no one in Ukraine knows how many of our compatriots have moved abroad, 2018*).

In modern conditions, when national competitiveness is determined not only by the accumulation of tangible assets, but also by the development of "human capital", a great threat to the economic security of the country is "brain drain". This also refers to the internal outflow of intelligence from education, science and culture to less intellectual spheres of activity abroad.

Thus, the mobility of scientific personnel, inherent in the modern world, in our country is manifested as a one-sided process of the destruction of national science (*Berbenets, 2012*). It is clear that the events in Ukraine since 2014 contributed to the revival of migration processes. The economic and political crisis, the annexation of Crimea and the deployment of military operations in the Donbass stirred up a wave of migration both inside Ukraine and abroad.

However, the phenomenon of external labor migration is not new. Ukraine and before the revolution of dignity was among the most migration-active countries since the 1990s.

Countries showing better economic performance than Ukraine attract our human resources. In the figure below we can see the strong correlation between level of GDP per capita and index of net migration (cor=0,86).

This is a natural process that cannot be stopped in a globalized world, but it is possible to work to eliminate the causes that drive people to migrate. It is likely that with the improvement of the economic situation in Ukraine, the flow of labor migrants abroad will decrease.

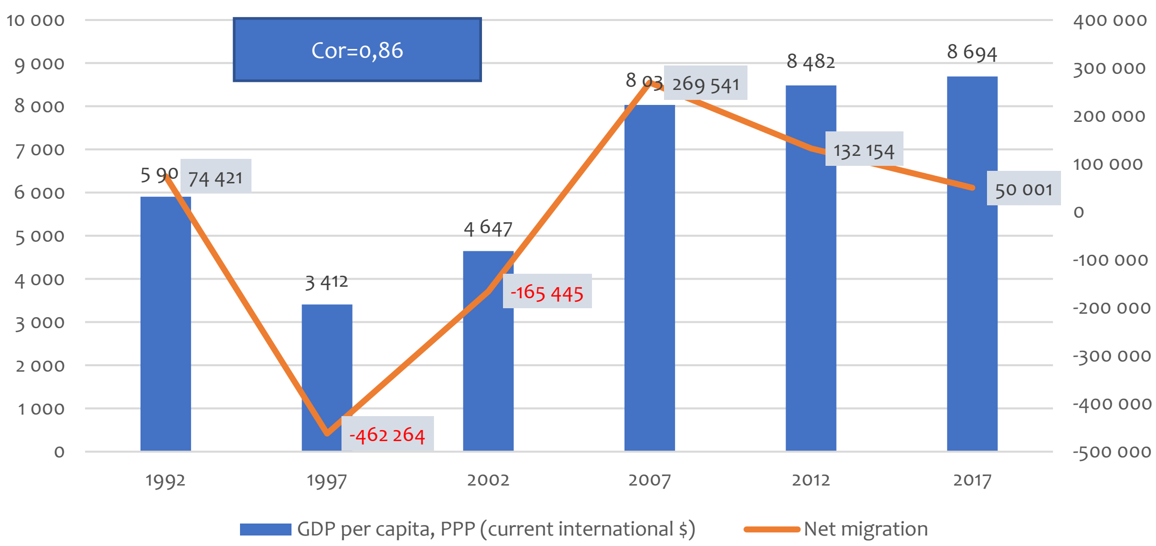

Fig. 2. Dynamics of Net migration and GDP per capita in Ukraine*

*Source: compiled by Authors based on statistical data (*World Bank Data, 2019*).

The State Statistics Service of Ukraine with the participation of international organizations conducted the large-scale studies of external labor migration of Ukrainians by the international methodology three times: in 2005-2008, in 2010-2012 and in 2015-2017 (*The great migration: no one in Ukraine knows how many of our compatriots have moved abroad, 2018*). The most popular destinations for external migration are Poland and Russia, and since 2014 there has been a reorientation of migrants from Russia to Poland. More than half or about 3 million of Ukrainian migrants live in Russia. The number of migrants who went to work in the Western direction, for 2014-2018 years has tripled, according to Eurostat data on the number of first issued to Ukrainians work permits in the EU. Although such dynamics may indicate partial legalization of illegal migrants.

More than 90% of the first issued residence and employment permits in the EU in 2014-2018 were issued in Poland. This dynamic looks more like a consequence of Poland's conscious policy to legalize Ukrainian workers and not to accept refugees from the Middle East at the level of other EU countries than such an explosive growth in the number of Ukrainian labor migrants in Poland.

The most significant positive factor of external labor migration is that a significant part of the earned funds Ukrainians brings or transfer to Ukraine. Remittances of migrant workers help to reduce poverty rates, allow relatives to finance current consumption, education of children, medical services and housing construction as well as to fund new businesses.

In 2018 the volume of private remittances amounted to $ 11.11 billion or 8.4% of GDP, which is significantly larger than FDI volumes. The value of cash flows from migrant workers is probably higher than the official statistics reflect, as migrants tend to use informal channels of transfer of funds to Ukraine. According to the state statistics survey, 70% of migrants brought money personally or passed it through friends or drivers.

Also, the positive aspects of increasing emigration of Ukrainians include an acquisition of new skills, their growing mobility in the labor market, technology exchange, increase in opportunities for entrepreneurship as well as growth of export opportunities for Ukrainian producers (because migrants abroad generate demand for Ukrainian goods in the host country).

Thus, in summary we can point out the following advantages of external labor migration for Ukraine:

– promotion of Ukraine's integration into the world labor market;
– decreasing level of unemployment in the national labor market and reduction of social tension in society;
– receipt of additional foreign currency in Ukraine in the form of remittances of labor emigrants and investment in the economy through the establishment of joint ventures with foreign founders;
– provision of the able-bodied population with the opportunity to realize their abilities abroad, improve their skills and financial situation;
– coverage of the shortage of specialists of rare professions and qualifications in Ukraine at the expense of foreign labor;
– stimulation of productive activity of Ukrainian workers through the creation of competition with foreign specialists (*World Bank Data, 2019*).

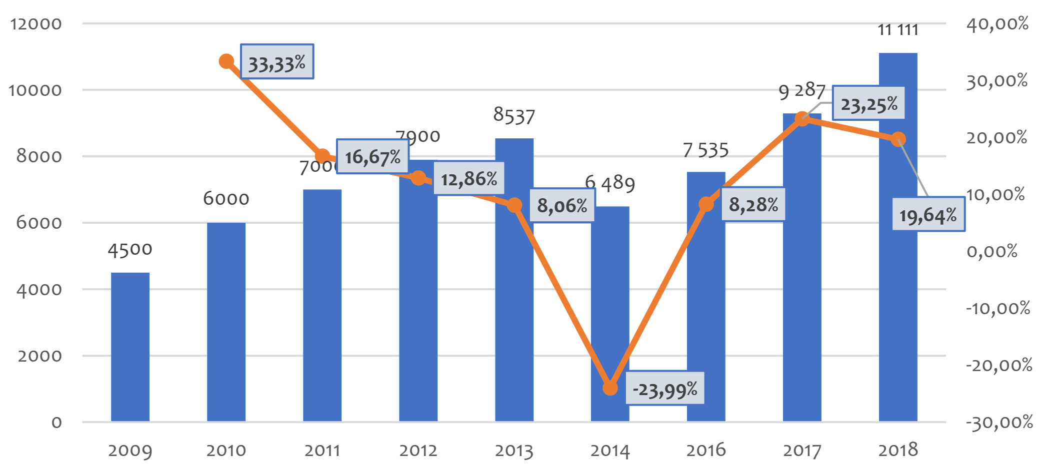

Fig. 3. Dynamics of volumes of remittances of labor migrants of Ukraine for 2009—2018, million USD*

*Source: compiled by Authors based on statistical data (*State Staitstics Service of Ukraine, 2019*).

Attracting mainly young, well-educated people to migration processes is a kind of demographic and economic "investment" in the countries of immigration and, conversely, contributing to the aging of the population, the deterioration of labor potential in the countries of emigration. In addition, interstate labor migration is an important factor in the development of technologies, exchange of work experience, the factor of restructuring the professional and qualification structure of employment, rapid and effective adaptation to the conditions of the world market.

Among the negative consequences of labor migration are the following:

– Ukraine's loss of the most competitive part of its own labor force, which leads to a slowdown in scientific and technological progress;
– increasing pressure on the national labor market due to the creation of competition by foreign nationals to the local labor force;
– Ukraine's loss of foreign currency exported by immigrants in the form of their own savings;
– emergence of political and economic claims to Ukraine by the recipient countries in connection with the increase in illegal labor migration of Ukrainians;
– growth of criminal and social tension in society for ethnic conflicts.

Processes related to external labor migration are regulated by the state migration policy of Ukraine. An important task of the Government today is not only to create conditions through legal and economic mechanisms for the legal employment of Ukrainian citizens abroad, but also to develop, first of all, a policy of returning Ukrainian citizens - migrant workers to their homeland.

Among main problematic issues in the field of labor migration that need to be resolved as soon as possible are the following (*Libanova, 2018; International migrant stock: The 2017 revision, N/a*):

– changes in approaches to the statistic calculation of labor migrants working outside of Ukraine;
– supporting policy on the formation of the attractive domestic labor market;
– implementation of the policy aiming to strengthen the social protection of Ukrainian migrants working abroad;
– application of preventive measures towards illegal labor migration.

5. Discussion

Summarizing the analyzed information, we can draw the following conclusions:

1. The causes of external labor migration bear the economic nature. The external causes of labor migration of citizens of Ukraine abroad are capacious labor market of Western countries and attractive material assessment of labor activity. The internal causes include a low level of labor force price, socio-economic crisis, decline in production and aggravation of economic contradictions.
2. Motives that predetermine travel abroad: earnings to improve living conditions (buying an apartment or building a house), the purchase of a car or other expensive durable goods; earnings to meet the current needs of life-food, the purchase of necessary everyday goods (clothing, etc.); accumulation of funds to pay for the education of children in higher education institutions; accumulation of start-up capital for the creation of their own business or the development of their business; motives of an intangible nature (to see the world, get certain work skills, improve language skills, etc.).
3. The main areas where migrant workers are employed are: construction; agriculture (harvesting); household (cleaning the house, cooking, looking after children and the infirm elderly); trade and service.
4. Main regularities of external labor migration from Ukraine:
   – most of the labor migrants abroad live in the border areas;
   – more rural residents go abroad;
   – the majority of migrants are aged 30-50 years;
   – married people are more involved in labor migration than unmarried people;
   – men are more likely to be actual potential migrants.
5. The problem of external labor migration is relevant for Ukraine. This phenomenon has both positive (promoting Ukraine's integration into the world labor market, decreasing unemployment in the national labor market, reducing tensions in society, receipt of additional foreign currency in Ukraine in the form of remittances of labor emigrants and investment in the economy through the creation of joint ventures with foreign founders) and negative ("brain drain", discrimination and exploitation of our citizens by local employers,

the emergence of political and economic claims to Ukraine by the recipient countries in connection with the increase in illegal labor migration of Ukrainians, the growth of crime and social tension in society for ethnic conflicts) consequences.

6. Conclusions

We believe that the main directions of the state migration policy should be aimed at ensuring the freedom of movement of citizens following European standards. The regulation of migration flows should take into account the socio-economic conditions, the demographic structure of the country's regions and the national characteristics of migrants. The effectiveness of the state migration policy depends on the further development and direction of external labor migration of the country as well as the recognition and prestige of Ukraine in the world.

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Performance appraisal and the quality of working life

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Purpose – to identify the relationship between performance appraisal and *quality of working life*. Explicitly, investigate the effects of firms' performance appraisal on quality of working life (QWL).

Design/Method/Approach. The study is based on the three businesses data operating in the Republic of Kosovo with ninety-seven (n=97) individual respondents (employees). The study's questionnaires of the study were prepared, the responses obtained, the econometric model was constructed to empirically test this relationship, and the questionnaires data were processed by the IBM SPSS v.25.0 program as a tool to provide the statistic findings. Results and proposals are brought forward by the matched t-test, independent t-test sample, ANOVA, and regression, which were applied for testing hypotheses.

Findings. Econometric results suggested that applying performance appraisal in the correct way and for appropriate goals, improves job satisfaction, employees' satisfaction, motivation to employees, and as a result the quality of working life.

Theoretical implications. The theoretical significance of this study is the increases of opinion and the change of judgment for the effects of performance appraisal on quality of working life.

Practical implications. The practical benefit of this study is that it can provide a guideline for managers to apply performance appraisal in the correct manner to increase the quality of working life, and as a result to improve their organization's performance.

Originality/Value. The importance of quality of working life has been recognized. It is the first paper that examines the relationship between performance appraisal and quality of working life and finds out their interactions using quantitative methods.

Research limitations/Future research. Predictions for further research are to analyze the relation of performance appraisal parameters and QWL, adding other variables that mediate or moderate the relation of these two variables.

Paper type – empirical.

Keywords: performance appraisal; QWL; job satisfaction; employees' satisfaction; motivation.

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Службова атестація та якість трудового життя

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Мета роботи – визначити взаємозв'язок між службовим атестуванням та якістю робочого життя. Явним чином дослідити вплив оцінок результативності фірм на якість робочого життя (QWL).

Дизайн/Метод/План дослідження. Дослідження базується на даних трьох підприємств, що діють у Республіці Косово, дев'яносто сім (n = 97) окремих респондентів (службовців). Були підготовлені опитувальники дослідження, отримані відповіді, економетрична модель була побудована для емпіричного випробування цього взаємозв'язку, а дані анкети були оброблені програмою IBM SPSS v.25.0 як інструмент для надання статистичних висновків. Результати та пропозиції висуваються на відповідність t-тесту, незалежному тестовому зразку, ANOVA та регресії, які були застосовані для тестування гіпотез.

Результати дослідження. Економетричні результати свідчать про те, що проведення службової атестації відповідним чином і для відповідних цілей покращує задоволеність роботою, задоволеність працівників і мотивацію працівників та, як результат, якість робочого життя.

Теоретичне значення дослідження. Розширено думки та змінено судження стосовно впливу службового атестування на якість робочого життя.

Практичне значення дослідження. Практична користь дослідження полягає в тому, що за його результатами керівництво отримує рекомендації стосовно належного здійснення оцінки продуктивності (службового атестування) для підвищення якості робочого життя і, як результат, для покращення результатів роботи своєї організації.

Оригінальність/Цінність/Наукова новизна дослідження. Визнано важливість якості трудового життя. Це перша стаття, у якій вивчено взаємозв'язок між службовою атестацією та якістю робочого життя і з'ясовано їх взаємодію за допомогою кількісних методів.

Обмеження дослідження/Перспективи подальших досліджень. Прогнози для подальших досліджень полягають у аналізі співвідношення параметрів оцінки ефективності та QWL, додаючи інші змінні, що опосередковують або зменшують відношення цих двох змінних.

Тип статті – емпіричний.

Ключові слова: оцінка персоналу; якість трудового життя; задоволення від роботи; задоволеність працівників; мотивація.

Служебная аттестация и качество трудовой жизни

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Цель работы – выявить взаимосвязи между оценкой производительности и качеством трудовой жизни. Явным образом исследовать влияние оценки деятельности фирм на качество трудовой жизни (QWL).

Дизайн/Метод/План исследования. Исследование основано на данных трех предприятий, действующих в Республике Косово, с девяносто семью (n=97) отдельными респондентами (работниками). На основе подготовленных опросников получены ответы и разработана эконометрическая модель для эмпирической проверки взаимосвязи. Результаты опроса обработаны с помощью программы IBM SPSS v.25.0 в качестве инструмента для предоставления статистических результатов. Результаты и предложения выдвигаются с помощью согласованного критерия Стьюдента, независимого образца критерия Стьюдента, ANOVA и регрессии, которые применялись для проверки гипотез.

Результаты исследования. Эконометрические результаты свидетельствуют о том, что проведение служебной аттестации соответствующим образом и для соответствующих целей повышает удовлетворенность работой, удовлетворенность сотрудников, мотивацию сотрудников и, как следствие, качество трудовой жизни.

Теоретическое значение исследования. Расширено мнение и изменены суждения о влиянии служебной аттестации на качество трудовой жизни.

Практическое значение исследования. Практическая польза исследования заключается в том, что, основываясь на его результатах, руководство получает рекомендации по надлежащему осуществлению оценки производительности (служебной аттестации) для повышения качества трудовой жизни и, как следствие, для повышения эффективности организации.

Оригинальность/Ценность/Научная новизна исследования. Признана важность качества трудовой жизни. Это первая статья, в которой изучена взаимосвязь между служебной аттестацией и качеством трудовой жизни и выяснено их взаимодействие с применением количественных методов.

Ограничение исследования/Перспективы дальнейших исследований. В дальнейших исследованиях возможно проанализировать соотношение параметров оценки производительности и QWL, добавляя другие переменные, которые опосредуют или уменьшают соотношение этих двух переменных.

Тип статьи – эмпирический.

Ключевые слова: оценка персонала; качество трудовой жизни; удовлетворение от работы; удовлетворенность работников; мотивация.

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1. Introduction

This paper aims to find out the fundamental role of performance appraisal on the quality of working life. In the terms of up-to-date market competition with tremendous pressure towards globalization, when innovations become the dominant factor in the social and economic development context, and on the clear and crucial orientation for the human capital, have created new challenges for businesses and their managerial system. Appropriate dealing with human resources helps an organization to increase its performance (*Mulolli et al., 2015*). So, high QWL is essential for organizations to persist in attracting and retaining employees (*Sandrick, 2003*). According to this issue references, QWL is a comprehensive, department-wide program designated to improve employee satisfaction, strengthen workplace learning and help employees better manage the change and transition. Dissatisfaction with QWL is a problem, which affects almost all employees regardless of position or status (*Saraji & Dargahi, 2006*). According to them, a lot of managers seek to reduce dissatisfaction at all organizational levels, including their own. However, this is a complex problem as it is difficult to isolate and identify all of the elements affecting the QWL (*Walton, 1973*). The first problem in management for QWL is to identify the domain of working life that can be included as corporate stewardship and responsibility (*Mirvis & Lawler, 1984*). For example, human capital theorists regard employee's services as inputs to the firm's production function. Thus employees are regarded as 'resources' because they 'possess expected future service potential' (*Flamholtz, 1972*). This implies that organizations are responsible for providing jobs, performance appraisal, training, and compensation to employees for these influences over the future service potential of employees and ultimately, their 'value' to the organization (*Mirvis & Lawler, 1984*). It is essential for all, especially for managers to understand in detail such challenges, in order to increase the ability for business success using employees as the organization's worthiest resource. In the developed and developing countries, human resources that are selected and motivated well enough are considered as a competitive advantage for firms. A saying goes "the people's desire to perform at a high level requires setting high standards of performance". Employees should know with accuracy the reason of their being in the payment list, what exactly is expected from them, and what provides a high performance. Nowadays, the organizations face hard competition, with unstable and turbulent environment, therefore managers ought to be focused on creating competing advantage through organization employees' development. Performance appraisal of employees is one of the most efficient methods for employees' development, job satisfaction, motivation, and evaluation, in modern times. These are direct impact factors on QWL. According to *Mirvis & Lawler (1984)*, these broad perspective specific criteria of QWL are numbered and varied. Their diversity is due to the distinct disciplinary conception of OWL in each of the social science disciplines (*Westley, 1979*) and to change views of corporate responsibilities and employees' rights (*Mirvis & Lawler, 1984*). Despite differences in conception, jargon, and emphasis, two sets of criteria are common to definitions of QWL. The first set encompasses papers' features and working environment that influence employees' work lives, whereas, the second set includes criteria of employees' welfare and well-being. A review of these definitions highlights their disciplinary and historical development and provides the basis for developing an integrated definition of QWL (*Mirvis & Lawler, 1984*). According to *Cherns (1975)* QWL origins comes from symbiosis of structural, systems perspective of organizational behavior with the interpersonal, human relations, supervisory-style perspective, whereas (*Seashore, 1975*) stated that, a significant by-product of the approach to the QWL discussed was identification of the aspects of jobs and working environments that affect most strongly on the job satisfaction, job performance, and life-long wellbeing of those who are so employed. A worthy definition for quality of life by *Felce and Perry (1995)* described "quality of life is an elusive concept approachable at varying levels of generality from assessment of societal or community wellbeing to specific evaluation of the situations of individuals or groups." Whereas the quality of working life "…is described as the favorable working environment that supports and promotes satisfaction by providing employees with rewards, job security, career growth opportunities, etc." (*Nanjundeswaraswamy & Swamy, 2013*). This is the core definition that stands behind this study. This study focuses on the way how performance appraisal can create a favorable working environment, and as a result to improve the quality of working life.

According to the findings by different authors, performance appraisal is a tool that by its measurements refers to the QWL practices, and has a direct effect on job satisfaction, motivation, and employee payments. Despite this importance, a few empirical studies are done to fill this gap in the literature and to enrich the human resource management literature with worthy evidence, this paper tries to show the relationship between performance appraisal and QWL practices, using quantitative methods. The reasons for this research are the lack of a good performance appraisal system by firms, to continuously evaluate employees and to make financial and/or non-financial rewards based on those performance appraisal results, which prevents them from improving their QWL.

The rest material of this paper is organized as follows: the first section overviews the literature on quality of working life, its origin and definitions, performance appraisal, and integration of these two concepts. In the second section, the hypotheses of this study were presented. Whereas, the third section, covers the methodology used for the literature review and testing hypotheses. Further on, sections four and five deal with the results of testing hypotheses, discussing results, and conclusions. At last, the sixth section is about the implications for users/research of this paper.

2. Theoretical background

Recently, people, their skills and acquaintances are considered as the most important resource that one company have, for this reason, it is not enough only to reward them, but it is necessary to appreciate them (*Banfield & Kay, 2008*), for great employee performance appraisal composed with reward system representing the most important part of performance appraisal management (*Lussier & Henson, 2012*). In this part, there are closely explained the quality of working life and performance appraisal, that are obtained from the findings of other authors related to these both concepts.

2.1. Quality of working life

Several, researchers and theorists were interested in the QWL concept meaning and tried to identify the kinds of factors determining such an experience at work (for instance: *Seashore, 1976; Lawler, 1982; Mirvis & Lawler, 1984; Kalra & Ghosh, 1984; Kerce & Booth-Kewley, 1993*). It is worth to mention that, decades before authors of the social sciences and humanities had shown real interest in work and, more specifically, in the relationship between workers' attitudes and behaviors, on one hand, and the company's productivity, on the other (*Martel & Dupuis, 2006*). The studies by sociologist *Elton Mayo*, at Western Electric's Hawthorn plant in 1933 – now recognized as "classic" – involved verifying the influence of environmental factors on plant workers' performance. Mayo's results softened Taylor's execution rules that had been applied until then. From that point on, the starting point towards a policy of humanizing employees' work conditions can be seen (*Mayo, 1960*). According to *Elizur and Shye (1990)* at the beginning, QWL was synonymous with the employability rate, job security, earnings, and benefits. This listing of objective criteria soon gave way to job satisfaction as the target assessment criterion (*Martel & Dupuis, 2006*). Despite this shift to a more subjective construct, some researchers, such as (*Lawler, 1975*), remained convinced of the need for objective criteria to measure QWL.

The analysis of publications over the past 20 years highlights a number of attempts to empirically define QWL (*Taylor, 1978; Levine, et al., 1984; Mirvis & Lawler, 1984*). Although there is no formal definition of quality of working life (QWL), industrial psychologists and management scholars in general agree that QWL is a construct that deals with the well being of employees, and that QWL differs from job satisfaction (*Quinn & Staines, 1979; Staines, 1980; Near, et al., 1980; Champoux, 1981; Kahn, 1981; Lawler, 1982*). QWL differs from job satisfaction in the point that job satisfaction is construed as one of many outcomes of QWL (*Sirgy, et. al., 2001*). According to that author, the QWL does not only affect job satisfaction but also satisfaction in other life domains such as family, social life, leisure, financial life, and so on. Therefore, the focus of QWL is beyond job satisfaction. It involves the effect of the workplace on satisfaction with the job, non-work life domains, and satisfaction with life overall, personal happiness, and subjective well-being. For example, *Danna and Griffin* (*1999*) view QWL as a hierarchy of concepts that includes life satisfaction (hierarchy peak), job satisfaction (hierarchy middle), and work-specific facet satisfaction such as satisfaction with wage, co-workers, supervisor, among others.

Why is the quality of working life (QWL) so important? There is some evidence showing that a happy employee is a productive employee; a happy employee is a dedicated and loyal employee (e.g., *Greenhaus et al., 1987*). Many researches show that QWL may have a significant effect on employee behavioral responses, such as organizational identification, job involvement, job satisfaction, job effort, intention to quit, job performance, personal alienation, organizational turnover (e.g., *Carter et al., 1989; Efrat, & Sirgy, 1990; Efraty, et al., 1991; Sirgy, 2001; Rahman, et al., 2010*).

In a classic study, *Merrihue and Katzell* (*1955*) found that the development of an 'employee relations index' contributed to better human resource management in a firm. More recently, (*Nadler, et al., 1976*) found that an 'ongoing feedback system' integrating personnel, performance, and survey measures of working life, when used effectively by managers, leads to higher job satisfaction, improved performance, and lower absenteeism and turnover. *Sirgy, et al.* (*2001*) built a hypothesis that emphasizes that job satisfaction is a positive function of QWL. The more so, there are numerous authors that have studied the same job satisfaction using a single indicator-item, commonly used in quality-of-life studies (e.g., *Efraty & Sirgy, 1995; Efraty, et al., 1997*).

2.2. Performance appraisal

Performance appraisal tends to improve work performance, communication expectations, and determining employees' potential and helping employee satisfaction (*Aggarwal & Thakur, 2013*). Different definitions have been given for performance appraisal: "Performance appraisal" is a process within the overall performance management process (*Dowling, et al., 1999*), it can be defined as the formal assessment and rating of individuals by their managers (*Armstrong, 2012*), and is defined as "evaluation of an individual's work performance for achieving at objective personnel decisions" (*Robbins, et al., 2000*). Generally, performance appraisal aims to recognize the current skills' status of their workforce (*Shaout & Yousif, 2014*).

There are various techniques to evaluate employees' performance appraisal (*Armentrout, 1986; Stronge, 1991; Sanchez & De La Torre, 1996; Decenzo & Robbins, 1988; Arvey & Murphy, 1998; Jiang, et al., 2001; Hroník, 2006; Chang & Hahn, 2006; Deb, 2006; Randhawa, 2007; Jafari & Amiri, 2009; Khurana, Khurana, & Sharma, 2010; Dvořáková, 2012; Aggarwal & Thakur, 2013; Dagar, 2014; Islami, et al., 2018*).

According to *Giangreco et. al.* (*2012*), performance appraisal of employees is a process which allows managers to evaluate, compare, and give feedback for employee performance and manage human resource in the organization. Whereas, *Armstrong* (*2012*), stressed that performance management can be defined as a systematic process that by developing individual and team performance improve organization performance. Performance management is a process that includes performance planning, appraisal, rewarding and development (*Deb, 2006*). On the other hand, *Armstrong* (*2012*) asserts that performance appraisal can be defined as a formal evaluation and individuals' evaluation from their manager.

2.3. Integrated view of working life and performance appraisal

For this paper purposes, QWL is viewed as an economic, social, and psychological relationship between an organization and its employees. In functional terms, it can be represented as *QWL=f(P,S)*, wherein *P* represents characteristics of the performance appraisal in an organization and *S* represents their effect on employees' satisfaction, job satisfaction and well-being as individuals or members of an organization.

For example, to fulfill economic and social responsibilities to employees the organizations must provide a safe working environment, adequate and fair compensation, equal employment opportunities, and opportunities for job mobility and advancement (*Mirvis & Lawler, 1984*). According to the authors, human resource orientation adds further responsibilities to employers to provide supervision, jobs, influence, evaluations, and rewards that motivate and improve personnel. These criteria represent elements of an emerging 'psychological' contract (*Yankelovich, 1978*) between employers and employees as represented in contemporary views of a high QWL environment. Criteria of employee welfare and well-being, in its turn, include satisfaction with work and working environment, membership in the organization as reflected in absenteeism and turnover, and membership in the larger society as reflected in health and attitudes towards life, participation in familial and community institutions, and continued employability in a changing economy (*Mirvis, & Lawler, 1984*).

3. Research hypothesis

Based on the above literature review this section presents the study of the hypotheses. By testing the current study hypotheses the gap in the existing literature for performance appraisal and the quality working life will be eliminated. In order to provide evidence about the relationship between performance appraisal and the quality working life, the below hypotheses were tested:

Hypothesis 1 (H_1): Firms with high levels of employee performance appraisal have high levels of employee job satisfaction.

Hypothesis 2 (H_2): The higher the lack of communication of employee performance appraisal results, the higher the employees' disappointment.

Hypothesis 3 (H_3): Performance appraisal of managers by employees has a positive relationship with increasing employees' satisfaction.

Beyond these hypotheses, this study indicates other important findings that were collected by research questions presented in the questionnaires, the answers to research questions are shown and analyzed below in section four.

4. Data and Methods

To realize this study, the methodology of the combination of primary and secondary data was applied. The article has been prepared by using the analysis of secondary data for literature review (scientific publications and articles from specialized databases, such as Science Direct, Emerald, Springer, Emerald, Academy of Management, and ProQuest) and primary data in the form of results of the quantitative survey conducted in a sample firms (three firms) that operate their business activities in the service sector (information technology), in Republic of Kosovo. For the empirical analysis of the study, the data were gathered from a self-administered questionnaire by ninety-seven employees who worked in the three firms. The participant firms were chosen based on their annual turnover, with selecting three with the highest annual turnover firms. To measure the effect between variables in this study SPSS v. 25 programs have been used. Also, the interview was used as a tool to gather data from human resource managers of these companies.

4.1. Data Collection

This paper results are conducted by 97 valid questionnaires with full data analysis. The questionnaires were filled in three companies, those did every year performance appraisal, but until now they had not done any research to evaluate the effect of performance appraisal on improving the quality of working life. The designed questionnaire is for evaluation of the firm's employees regarding the effect of performance appraisal on their job satisfaction, employee's satisfaction, motivation, the disappointment of employees, rewarding system, the way how firms do the performance appraisal, result communication, and some other relevant issue of performance appraisal and QWL. Responded firms operate in the service sector (information technology). The scale used in the questionnaire is based on the 5-point Likert scale. Likert scale (1- not agree at all, to 5- strongly agree). Also, the questionnaire has several questions, like questions with "yes" or "no" answers, the question regarding "demographic data", and the question regarding "employees' careers".

4.2. Questionnaire and Interviews

In order to obtain the necessary data for this research, primary sources of information were mainly used questionnaires as the data collection tools, which were aimed at employees, in the three companies participating in this research. The questionnaires contained twenty vital questions. The questionnaires were distributed and filled in January 2019. Whereas, the interviews are used to gather information (from three HRM managers) by the human resource managers of these three firms. The results of these interviews are summarized (generalized) below in the discussion part and conclusions of this study, in section five.

4.3. Demographic data of respondent employees

Finally, ninety-seven questionnaires were duly completed, with presented data of respondents concerning demographic data such as respondent gender, respondent age, respondent education, and respondent work experience (see *Table 1*). The questionnaires are filled by employees of three respondent firms. The responded were chosen by the firms that operate in the service sector, among small and medium-sized firms form 1-250[1] employees.

4.4. The variables used

Independent variables: Performance appraisal (PA); Lack of results of communication (LRC); and Performance appraisal of managers (PAM). Whereas, *Dependent variables*: Job satisfaction (JS); Disappointment of employee (DE); and Employee satisfaction (ES). With SPSS software tested these variables, with the results derived from these econometric tests.

Table 1

Demographic characteristic of the sample (respondent employees)*

Demographic variable	Count (percentage) n=97
Respondent gender	
Female	(49%)
Male	(51%)
Respondent age	
Up to 25 years	(21,5%)
26 - 40 years	(64,5%)
41- 50 years	(12%)
Over 50	(2%)
Respondent education	
Middle school	(17,5%)
High school	(10,5%)
Bachelor	(49,5%)
Master	(20,5%)
Other	(2%)
Respondent work experience in these companies	
Up to 1 year	(16 %)
2-3 years	(30,5 %)
4-10 years	(45,5 %)
Over 10 years	(8 %)

*Source: compiled based on Author's calculations.

5. Results

The results are shown in two parts, in the first part, there are presented the descriptive analyses of some important questions. Whereas, in the second part there are presented the regression analysis for the tested hypotheses.

On descriptive analysis, there are presented six graphics for six main questions that have direct or indirect effects and are important for increasing employees' satisfaction, job satisfaction, reward system, and motivation, as a consequence, and on quality of working life.

5.1. Descriptive analysis

Fig. 1 presents the result of respondents' answers to the question if they think that performance appraisal helps them provide an atmosphere when all are encouraged to improve their aspects where they had stalled.

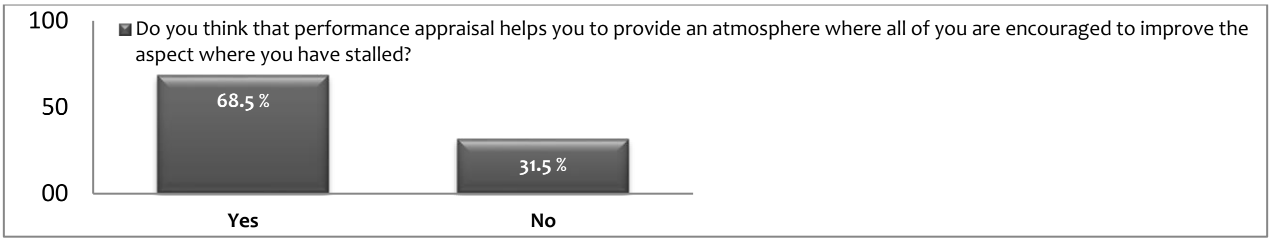
By the results, it is seen that most of the employees (about 68,5%) consider that performance appraisal is useful to create an atmosphere when all employees are encouraged to improve their work performance on the aspects that they had stalled before. The standard deviation of answers to this question is 0,468 (St.Dev.=0,468).

Fig. 2, shows the importance of performance appraisal on achieving employees' personal objectives.

The results below (*Fig. 3*) indicate that performance appraisal has a positive impact on achieving employee's objectives. Even though, a considerable number of employees are not agreed with that statement (about 37,5%). The standard deviation of answers to this question is 0,485 (St.Dev.= 0,485).

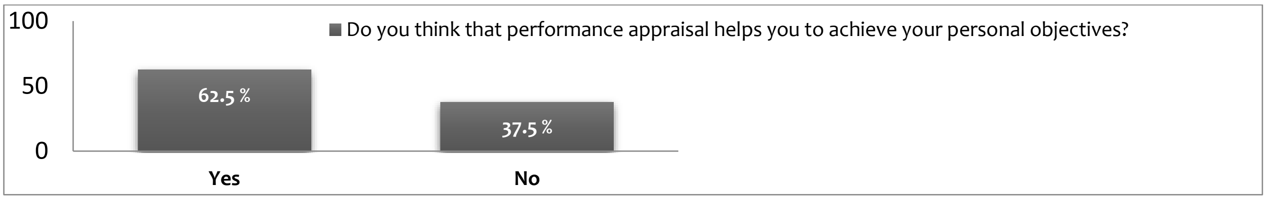
Fig. 4 shows some interesting results depicting that current performance appraisal applied by these three firms is not effective to support and improve employees' skills.

[1]Were used definition of Small and Medium Enterprises with European Union standards where <10 employees are micro, <50 employees are small, and <250 employees are medium-size enterprise (*European Commission, 2016*).



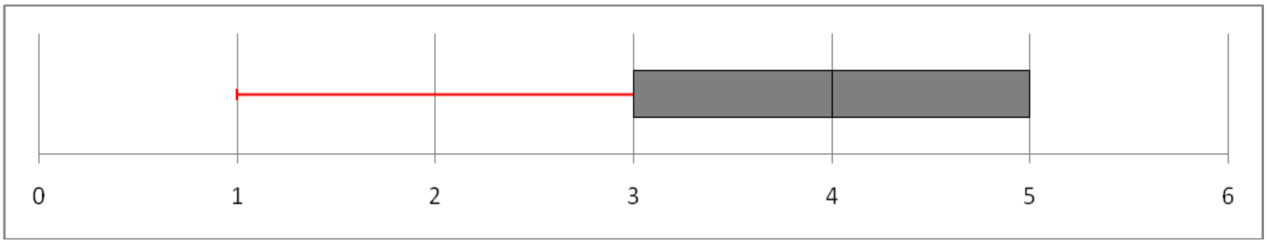
Axis x: Yes – agree with the statement, No – not agree with the statement;   Axis y: 0-100%

Fig. 1. Performance appraisal impact in the aspects where employees have stalled*
*Source: compiled based on Author's calculations.



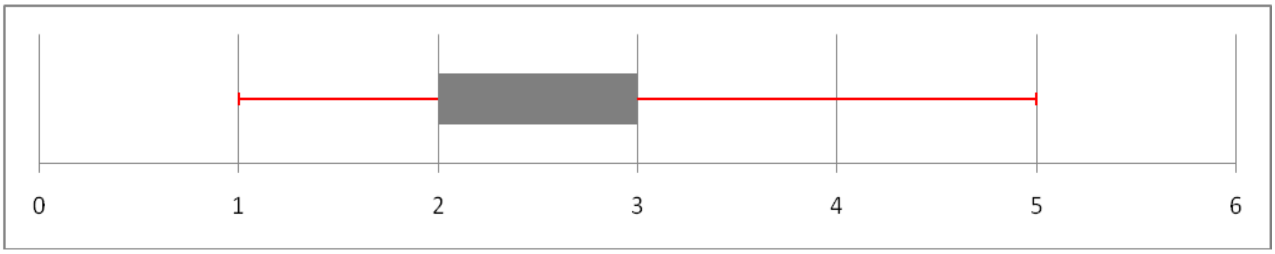
Axis x: Yes – agree with the statement, No – not agree with the statement;   Axis y: 0-100%

Fig. 2. Performance appraisal impact in achieving employee personal objectives*
*Source: compiled based on Author's calculations.



Axis x: 1 – not agree at all, to 5 – strongly agree

Fig. 3. Promoting successful employees work by supervisors*
*Source: compiled based on Author's calculations.

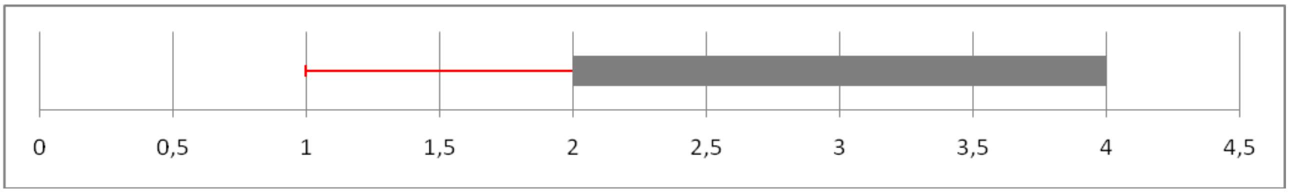


Axis x: 1 – not agree at all, to 5 – strongly agree

Fig. 4. Impact of current performance appraisal in employee career development*
*Source: compiled based on Author's calculations.

About half of the respondents' (*Fig. 4*) do not agree with the current performance appraisal used by their firm. The respondents were asked to indicate their opinion for the current method used by their firms for performance appraisal with this statement "Current performance appraisal used by your firm is closely related to career development." The answers were as follows: 22,5% do not agree at all with this statement; 44,5% do not agree; 19% agree on a moderate scale; 10% agree, and 4% strongly agree. Other descriptive statistics for the answers are presented below in the box-and-whisker diagram, the minimum value is 1, the first quartile (Q1) is 2, the average value is 2, third quartile (Q3) is 3, and the maximum value is 5. It is worth to note that, the standard deviation of the answers is 1.066 (St. Dev. = 1,066).

Related to *Fig. 5*, respondents were asked to tell the method by which they were rewarded for a good performance. Their answers have shown some remarkable results, 56% said that they were not rewarded for a good performance. The respondents were asked to indicate their firms' method used to reward employees "By which of methods described below your company rewards employees for good performance." The answers were as follows 24% with wage growth; 9% with gratefulness; 11% with promotion; and 56% with no reward. Other descriptive statistics for the answers are presented below in the box-and-whisker diagram, the minimum value is 1, the first quartile (Q1) is 2, the average value is 4, third quartile (Q3) is 4, and the maximum value is 4. It is worth to note that, the standard deviation of the answers is 1,270 (St.Dev.=1,270).

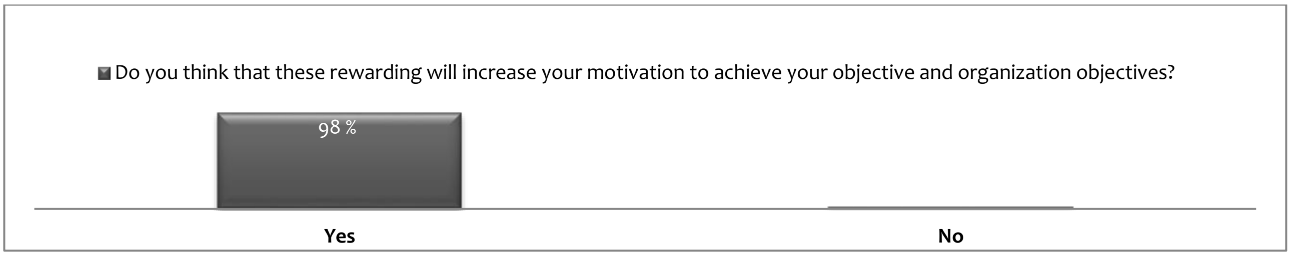


Axis x: 1- not agree at all, to 5- strongly agree

Fig. 5. The way of rewarding employees for a good performance*

*Source: compiled based on Author's calculations.

The last figure presents the employees' opinion regarding *Fig. 5* when they answered the question (yes or no) to express their views related to the role of reward on their work motivation (*see Fig. 6*). The results show that most of the responses 98% support the statement that the reward method increases employee motivation. The standard deviation of answers to this question is 0,142 (St.Dev.=0,142).



Axis x: Yes – agree with the statement, No – not agree with the statement; Axis y: 0-100%

Fig. 6. Impact of the rewards method in employees' motivation*

*Source: compiled based on Author's calculations.

5.2. Regression analysis

Regression results for the first hypothesis (H_1). To measure the effect of the independent variable "PA" in the dependent variable "JS" regression analysis was used. The regression analysis is presented in *Table 2*. According to regression analysis, the independent variable that enters in analysis explains 57.0% of the dependent variable "JS" (R^2=0,570). Independent variable "PA" is positively related to dependent variable "JS" by predicting it for 71%, and is important statistically with significance level α=0,05, (b=0,710, p=0,012), which means that for each 1 unit change in performance appraisal the job satisfaction of the employee changes by 71%.

Table 2

Regression analysis of dependent variable "job satisfaction (JS)", n=97*

Model	Square (R^2)	Standardized coefficients (β)	Un-standardized Coefficients (b)	Standard error of variables (S.E)	Fisher test (F)	t-statistic (t)	Probability value (p)
model cons.	0,570				37,971		
(constant)			-3,379	1,857		-1,106	0,042
PA		0,645	0,710	0,117		0,256	0,012

*Source: compiled based on Author's calculations.

According to *Table 2*, the "Beta" column indicates that increasing performance appraisal by 1 standard deviation, job satisfaction increases by 0,645 standard deviations.

Regression results for the second hypothesis (H_2). To measure the effect of the independent variable "LRC" independent variable "DE" regression analysis was used. The regression analysis is presented in *Table 3*. According to regression analysis, the independent variable that enters in analysis explains 51,3% of the dependent variable "DE" (R^2=0,513). Independent variable "LRC" is positively related to dependent variable "DE" by predicting it for 83,1% and is important statistically with significance level α=0,01, (b=0,831, p=0,000), which means that for each 1 unit change in the pursuing of lack of communication of employee performance appraisal results, the level of employees' disappointment increases by 83,1%.

Table 3

Regression analysis of dependent variable "disappointment to employee (DE)", n=97*

Model	Square (R^2)	Standardized coefficients (β)	Un-standardized Coefficients (b)	Standard error of variables (S.E)	Fisher test (F)	t-statistic (t)	Probability value (p)
model cons.	0,513				92,744		
(constant)			-0,763	0,324		-2,342	0,021
LRC		0,720	0,831	0,122		9,630	0,000

*Source: compiled based on Author's calculations.

According to *Table 3*, the "Beta" column indicates that increasing the lack of results of communication by 1 standard deviation, the employee's disappointment increases by 0,720 standard deviations.

Regression results for the third hypothesis (H_3). To measure the effect of the independent variable "PAM" independent variable "ES" regression analysis was used. The regression analysis is presented in *Table 4*. According to regression analysis, the independent variable that enters in analysis explains 70,7% of the dependent variable "ES" (R^2=0,707). Independent variable "PAM" is positively related to dependent variable "ES" by predicting it for 62,1%, and is important statistically with significance level α=0,01, (b=0,621, p=0,000), which means that for each 1 unit change in performance appraisal of managers by the employee, the satisfaction of the employee changes (increases) by 62,1%.

Table 4

Regression analysis of dependent variable "employees' satisfaction (ES)", n=97*

Model	Square (R^2)	Standardized coefficients (β)	Un-standardized Coefficients (b)	Standard error of variables (S.E)	Fisher test (F)	t-statistic (t)	Probability value (p)
model cons.	0,707				212,823		
(constant)			0,213	0,110		1,865	0,066
PAM		0,523	0,621	0,092		14,588	0,000

*Source: compiled by Authors.

According to *Table 4*, the "Beta" column indicates that increasing performance appraisal of managers by employees by 1 standard deviation, employee satisfaction increases by 0,523 standard deviations.

6. Discussion and conclusions

The purpose of this research is to find out the effect of performance appraisal in increasing the quality of working life by analyzing different aspects of performance appraisal, in order to emphasize how the application of each performance appraisal element effects on job satisfaction, employee satisfaction, and employee motivation.

This part discusses the impact of each research question presented above by Figures in the QWL. All answers that were presented in those Figures represent a direct or indirect effect of performance appraisal on quality of working life.

The first research question results represented in *Figure 1*, suggested firms to apply performance appraisal as it helps the employees to improve their performance and consequently become more satisfied with their job. When employees are satisfied with their job, their motivation to do that job also rises constantly, and finally, it enables them to increase their productivity and QWL. Performance appraisal makes employees aware if they get stalled to achieve their goal after employees take the results of their performance, they start to analyze all aspects when they were or were not good enough. Consequently, they change the manner of doing that job when the result shows that he/she got stalled. So, employees improve their ability to work and increase their job safety. Job safety, on the other hand, is one factor that effects on QWL.

The second research question represented in *Fig. 2* performance appraisal helps employees to achieve their personal goals. When an employee achieves own personal goal its motivation is increased to achieve other personal goals constantly and to motivate or stimulate his/her colleagues. After the employee performance is increased, it causes the increment of employee motivation, and both these, enable the growth of employee productivity. Productivity is one of the factors which has a positive relationship with QWL. According to this, the whole process has a positive effect on QWL increasing.

The third research question represented in *Fig. 3*, is explained why managers should be constantly aware of the successful job of employees and how this activity increases QWL. When managers are aware of the positive performance of their employees, they support employees in further work. Whereas employees' knowledge that a good performance is appreciated and rewarded by managers, increase their efforts for further work constantly. Also, effort increases the employee's job safety.

The fourth research question results represented in *Figure 4* taken by respondent employees showed that when a working company is not doing the performance appraisal for the primary goal that it should be done. Those firms do not use performance appraisal to achieve a specific goal. The aim of their performance appraisal is to find out how to achieve organizational goals, and not to develop the career of employees. It reflects that firms have short-term period planning because for the long-term period they have to use the performance appraisal as a tool to develop their employees. With the increase in the employees' performance, the firms' performance goes in the same direction. Why? It is because the firms' performance equals the value of working employees' performance.

Fifth research question represented in *Figure 5* are closely related to findings from previous research question to confirm the latter findings. The three of respondent firms do not apply enough or appropriate rewards to employees that have shown a good performance. Based on the literature, authors agree that is not only one way to reward employees, but different employees also prefer different rewards, some employees prefer to increase their wage, other employees like some gratefulness or promotion, some other want to ensure the job safety or equitable pay. It is required by managers to learn from each employee their motives in order to make adequate rewards that increase employees' satisfaction. Implementation of performance appraisal results by firms in this way, improve the employees' QWL. A performance appraisal system should be a barometer of employees for their performance, which enables employee rewards based on their performance. Respondent employees have expressed that, they feel better and more motivated in work if rewards are based on the result of performance appraisal. Unfortunately, the three respondents firm's have shown not implementing performance appraisal for the appropriate goal. Also, respondents indicated that the wage was not related to their performance. Even though they have shown a good performance their wage has not changed at all, or for not high enough. That results in a job's dissatisfaction for the employees and makes them unhappy.

The sixth research question represented in *Fig. 6*, depicts the motivation and potential to achieve personal and increased organizational goals for employees that were rewarded by their firm for a good performance. So, every time when employees have shown good performance they should be rewarded. The opposite makes them unhappy and unmotivated.

Based on the above-mentioned findings, in some firms, performance appraisal is not related to the career development of employees, because firms do not have a clear policy of using performance appraisal. In addition, it is clear that the meritocracy and reward system do not frequently related to the performance appraisal results.

This means that after performance appraisal results are taken, some employees exceed expects by managers, again they do not use methods to simulate that employees, as a result, will be disappointed with their work environment. All the statements and the discussed above are closely related to the quality of working life like job safety, employee satisfaction, employee productivity, and so forth.

To find the relation between variables of this research three independent variables "PA", "LRC", and "PAM" were presented, including three depended variables "JS", "DE", "ES". Three proposes have been made in the form of hypotheses: H1, H2, and H3. Regression analysis has been found enough information for the relation between performance appraisal and QWL. Regression results have supported three hypotheses raised in this research.

Table 5

Summary of hypothesis' testing*

Hypothesis	Accepted/Rejected
H_1: Firms with high levels of employee performance appraisal have high levels of employee job satisfaction.	Supported
H_2: The higher the level of lack of communication of employee performance appraisal, the higher the level of employees' disappointment.	Supported
H_3: Performance appraisal of managers by employees has a positive relationship with increasing employees' satisfaction.	Supported

*Source: compiled by authors.

The first hypothesis (H_1) has declared that "firms with high levels of the employee performance appraisal have high levels of employee job satisfaction." When the firm applies regularly performance appraisal, it enhances its personnel job satisfaction. Empirical findings results of performance appraisal showed 71% of job satisfaction, based on this result H_1 is accepted ($H_1\uparrow$). *Table 2* results showed that for each 1 unit of increase of performance appraisal in the firm, job satisfaction increases by 71% when all other variables remain unchanged. Based on this, if an organization makes performance appraisal, its personnel have higher performance and job satisfaction compared to the personnel of other firms without any performance appraisal.

The second hypothesis (H_2) has declared that "the higher the level of lack of communication of employee performance appraisal, the higher the level of employees' disappointment." When the firm applies performance appraisal but the results do not distribute and discussed with employees it enhances its personnel disappointment. Empirical results show that lack of communication of performance appraisal explained 83.1% of employee disappointment, based on this result H_2 is accepted ($H_2\uparrow$). *Table 3* results showed that for each 1 unit of lack of communication by managers for performance appraisal the employee's disappointment rises by 83.1% when all other variables remain unchanged.

When results of performance appraisal are taken by the managers, not for an indication to employees, it is de-motivates them because they do not feel like an important part of the firm. In this way, firms decrease the QWL of employees and as a result, decrease the firms' performance. The results also showed that one of the challenges which employees are faced after performance appraisal is the lack of feedback for their performance by managers. On the one hand, this is an obstacle to creating an effective relationship between employee and management and stop employees from taking rewards based on their merits, on the other hand, decrease their desire for working with high performance in the future. Employees of three respondent firms express clearly their dissatisfaction with performance appraisal, as their performance appraisal was done only in a formal way and it misses the practical implementation, which means that firms do not have clear standards goals to see if employees meet those standards.

The third hypothesis (H_3) has declared that "the managers' performance appraisal by employees has a positive relationship with increasing employees' satisfaction". The firm managers' performance appraisal by employees increases employee satisfaction. Empirical findings show that managers' performance appraisal by employees explained 62,1% of employee satisfaction, based on this result H_3 is accepted ($H_3\uparrow$). Results of *Table 4* showed that for each 1 unit of increase of managers' performance appraisal by employees increases the employees' satisfaction by 62.1% when all other variables remain unchanged.

From the interview with HR managers of three respondent companies and from the answers of the questionnaire it is seen that performance appraisal is done from high-to-down and not vice-versa, which means that managers are not evaluated by employees. According to findings with employees respondent, performance appraisal of managers by employees is needed, most of the employees said this action makes them more powerful at work and makes them as integral part of the performance appraisal process. This form of evaluation is a real mirror for managers in front of shareholders regarding the harmonization of attitudes between managers and employees of a firm. On these conditions, the employee would be more motivated to increase QWL.

Performance appraisal used by respondent firms illustrated where the evaluation is done only from high-to-down. The three-dimensional system would be a better system for performance appraisal, where initially there an evaluation from managers' side to the employee is done, than vice-versa, and at last, the evaluation from HR management needs to evaluate the employees' behavior within the group.

To sum up, the application of adequate performance appraisal brought an increase in QWL practices. H_1, H_2, and H_3 are accepted. Firms applying performance appraisal do not have a lack of results of communication of employees' performance, which results in higher QWL performance appraisal of managers by employees compared to firms that do not implement those activities. In this research, according to the results of the empirical analysis, the performance appraisal has a higher impact on QWL. Also, it can be identified, the extent to how much each element improves or exacerbates the employee satisfaction and happiness. This paper's findings show that a performance appraisal is an essential tool for increasing employees QWL, and for HR development. Obviously, this performance appraisal research results must be supported by managers to achieve a good quality of working life and to better performance for their firms.

7. Implications

The current paper validates the employees' QWL that have been generally undefined and with a high degree of inconsistency in people's understanding. Although some firms have realized the importance of increasing employees QWL, they often do not know exactly what to implement, due to a lack of understanding of what factor causes an increase in QWL. By offering, developing, and confirming the employees QWL, operational value of the performance appraisal and by demonstrating its efficacy in enhancing employee quality of working life, the current research provides HR managers with a useful tool for integrating the comprehensiveness of performance appraisal and QWL.

As today's HR competition by firms is moving towards "quality of working life", more and more firms are increasingly adopting strategies to increase their QWL.

The findings of this research support the view that the application of employee performance appraisal can have a discernible effect on the quality of working life and on improving the performance of the firm. The guideline that derives from the findings of this research can serve as a good way for HR managers to start improving their employee QWL should follow the following steps: (a) including the employees in designing the performance appraisal system; (b) always motivate high-performance employees; (c) create a clear policy about reward methods; (d) link the performance appraisal system with employee career development; and (d) create three dimensional a performance appraisal system.

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Система управління сталим розвитком підприємства готельно-ресторанного господарства на основі моніторингу витрат

***О. І. Юдіна*[‡]**

Мета роботи – сформувати та обґрунтувати оптимальну модель системи управління сталим економічним розвитком підприємства готельно-ресторанного господарства.

Дизайн/Метод/Підхід дослідження. Теоретичне узагальнення, логіко-критичний і економіко-математичний аналіз закономірностей функціонування підприємства як економічної системи, що базується на системному, процесному та цільовому методичних підходах.

Результати дослідження. Досліджено закономірності функціонування підприємства як економічної системи. Розглянуто системний, цільовий та процесний підходи до управління суб'єктом господарювання, шляхом розробки методології по формуванню цільових функцій його окремих підсистем і процесів. Розглянуто системний, цільової і процесний підходи до управління суб'єктом господарювання шляхом розробки методології, пов'язаної з формуванням цільових функцій окремих підсистем і процесів, що складають господарську діяльність, для виявлення закономірностей їх взаємодії та досягнення інтегрованого результату з найбільшою ефективністю. Сформовано структурно-логічну модель системи управління під впливом збурюючих факторів зовнішнього середовища на основі цільових функцій і встановлених векторів стійкого економічного розвитку підприємства готельно-ресторанного господарства з урахуванням моніторингу показників його діяльності.

Практичне значення дослідження. Результати дослідження дозволяють сформувати цільову систему управління сталим економічним розвитком підприємства готельно-ресторанної сфери на основі моніторингу витрат, як елементів спожитих ресурсів, і ефективно адаптувати до змін навколишнього середовища за допомогою інтеграції техніки, технології, економічних процесів, методів планування і управління.

Оригінальність/Цінність/Наукова новизна дослідження. Запропоновано методику формування системи управління сталим економічним розвитком підприємства готельно-ресторанної сфери на основі моніторингу витрат, яка, на відміну від існуючих, базується на сукупності системного, процесного та цільового підходів та дає змогу шляхом диференціювання процесів, що відбуваються на підприємстві, й встановлення закономірностей їх функціональних зв'язків з показниками витрат ресурсів, забезпечити прогнозування і планування результатів діяльності.

Обмеження дослідження/Перспективи подальших досліджень. Ці дослідження є основою для подальшої оцінки і прогнозування ефективності функціонування, оптимізації витрат ресурсів виробничо-комерційної діяльності суб'єкта господарювання, створення механізму сталого економічного розвитку підприємства.

Тип статті – теоретичний.

Ключові слова: готельно-ресторанний бізнес; цільове управління; сталий економічний розвиток; системний та процесний підходи.

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Management system the sustainable development of enterprise of hotel and restaurant business based on cost monitoring

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Purpose – to formulate and justify the optimal system model for managing sustainable economic development of a hotel and restaurant business.

Design/Method/Approach. A theoretical generalization, logical-critical and economic-mathematical analysis patterns of functioning of a business as an economic system, based on systemic, process and target methodological approaches.

Findings. The regularities of the business operating as an economic system are investigated. The system, target and process approaches to managing a business entity by developing a methodology related to the target functions formation of the individual subsystems and processes that make up the business activity are studied to identify patterns of their interaction and achieve an integrated result with the greatest efficiency. A structural-logical model of the control system is formed under the influence of disturbing environmental factors based on the objective functions and established vectors of sustainable economic development of the hotel and restaurant business, taking into account monitoring of its performance.

Practical implications. The research results allow formulating the target management system for the sustainable economic development of the hotel and restaurant businesses based on monitoring costs as elements of the resources consumed, and effectively get adapted to environmental changes through integration of engineering, technology, economics, planning and management methods.

Originality/Value. There was proposed a method for the system formation for managing sustainable economic development of a hotel and restaurant business based on cost monitoring, which, unlike existing ones, based on a set of system, process and target approaches and enables by differentiation processes occurring within the business and establishing patterns of their functional links with indicators of resource costs, provide forecasting and planning of performance.

Research limitations/Future research. These researches are the basis for the subsequent evaluation and prediction of the of the operation efficiency, optimize resource costs of production and commercial activities of business entities, to create a mechanism for sustainable development of businesses.

Paper type – theoretical.

Keywords: hotel and restaurant business; target management; sustainable economic development; system and process approaches.

Система управления устойчивым развитием предприятия гостинично-ресторанного хозяйства на основе мониторинга затрат

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Цель работы – сформировать и обосновать оптимальную модель системы управления устойчивым экономическим развитием предприятия гостинично-ресторанного хозяйства.

Дизайн/Метод/Подход исследования. Теоретическое обобщение, логико-критический и экономико-математический анализ закономерностей функционирования предприятия как экономической системы, базирующийся на системном, процессном и целевом методических подходах.

Результаты исследования. Исследованы закономерности функционирования предприятия как экономической системы. Рассмотрены системный, целевой и процессный подходы к управлению субъектом хозяйствования путем разработки методологии, связанной с формированием целевых функций отдельных подсистем и процессов, составляющих хозяйственную деятельность, для выявления закономерностей их взаимодействия и достижения интегрированного результата с наибольшей эффективностью. Сформирована структурно-логическая модель системы управления под воздействием возмущающих факторов внешней среды на основе целевых функций и установленных векторов устойчивого экономического развития предприятия гостинично-ресторанного хозяйства с учетом мониторинга показателей его деятельности.

Практическое значение исследования. Результаты исследования позволяют сформировать целевую систему управления устойчивым экономическим развитием предприятия гостинично-ресторанной сферы на основе мониторинга затрат, как элементов потребленных ресурсов, и эффективно адаптировать к изменениям окружающей среды с помощью интеграции техники, технологии, экономики, методов планирования и управления.

Оригинальность/Ценность/Научная новизна исследования. Предложена методика формирования системы управления устойчивым экономическим развитием предприятия гостинично-ресторанной сферы на основе мониторинга затрат, которая, в отличие от существующих, базируется на совокупности системного, процессного и целевого подходов и дает возможность путем дифференцирования процессов, происходящих на предприятии, и установления закономерностей их функциональных связей с показателями затрат ресурсов, обеспечить прогнозирование и планирование результатов деятельности.

Ограничения исследования/Перспективы дальнейших исследований. Эти исследования являются основой для последующей оценки и прогнозирования эффективности функционирования, оптимизации затрат ресурсов производственно-коммерческой деятельности субъектов хозяйствования, разработки механизма устойчивого развития предприятий.

Тип статьи – теоретический.

Ключевые слова: гостинично-ресторанный бизнес; целевое управление; устойчивое экономическое развитие; системный и процессный подходы.

1. Вступ

Сьогодні в складних економічних, політичних, соціальних та фінансових умовах функціонування підприємств в країні й в світі виникає необхідність у переході на стійке функціонування суб'єктів господарювання, що забезпечує їх стабільний розвиток і захист від негативного впливу зовнішніх і внутрішніх факторів. Сталий економічний розвиток підприємства готельно-ресторанної сфери – це комплексне поняття, як і сама господарська діяльність, що залежить від наявності ресурсів, ефективності їх використання, тобто зниження ресурсомісткості та підвищення рентабельності продукції (товарів, послуг), а також від наявності гнучкої організаційної структури і життєздатної системи управління.

На даний час проблематиці сталого розвитку, як предмету дослідження теоретичного і прикладного характеру, приділяється пильна увага багатьох вчених. Наукові роботи вітчизняних і зарубіжних авторів присвячені розробці теоретичних і методологічних основ концепції сталого розвитку в різних її аспектах – політичних, екологічних, організаційних, фінансових, економічних. Глобальний мир зіткнувся з необхідністю переходу на стійкий шлях розвитку, що забезпечує позитивні зміни в соціально-економічних системах у взаємодії з навколишнім середовищем в довгостроковій перспективі, та їх захист від природних і штучних соціальних, економічних криз в умовах негативних подій.

Дослідженню проблеми економічного розвитку підприємства та управління цим процесом присвячено роботи багатьох вітчизняних і зарубіжних науковців, зокрема: *J. Miltenburg* (2013), *R. Menda* (2014), *I. Chajkivs'kyj* (2014), *V. Lyashenko* (2014), *V. Vasylenko* (2014), *O. Balakireva, V. Heyets', & V. Sidenko, et al* (2014)., *A. Goncharov* (2015), *R. Holzmann, R. Paul, & H. Dorfman* (2015), *T. Kravchenko* (2015), *L. Tomialojts* (2015), *C. Roland, T. Atamer, & P. Nunes* (2015), *N. Afanas'yev, V. Rogozhin, & V. Rudyka* (2015), *O. Bobrova, V. M. Andrushkiv, & L. M. Mel'nyk* (2016), *M. Medvid'* (2016), *O. Bobrovs'ka* (2016), *L. Volkova* (2016), *Yu. Kharazishvili, V. Lyashenko* (2017), *I. Malaykina* (2018), *N. Kyrych, S. Spivak (2018)* та інших.

В. Ляшенко визначив економічний розвиток як процес, під час якого відбуваються зміни в соціально-економічній системі за рахунок накопичення потенціалу, причому ці зміни стосуються як системи в цілому, так і окремих її елементів, можуть носити як кількісний, так і якісний характер, забезпечуються відповідною діяльністю і в кінцевому підсумку сприяють досягненню поставленої мети і задоволенню економічних потреб суб'єктів (*Lyashenko, 2014*). *Т. Кравченко* «управлінням розвитком підприємства» пояснив як процес подолання суперечностей між економічним зростанням, збереженням природних ресурсів та поліпшенням якості життя населення (*Kravchenko, 2015*). *О.Балакрієва та колектив авторів* приділили увагу управлінню розвитком продуктивних сил на довгостроковому інтервалі й вважає їх основним фактором економічного розвитку (*Balakireva, Heyets', Sidenko, et al., 2014*).

У національній парадигмі сталого розвитку України (*Ed. Paton, 2013*) категорію «управління економічним розвитком» охарактеризовано як системне узгодження, збалансованість складових елементів і процес розробки на цій основі стратегії сталого розвитку господарських утворень. *Б. Андрушків і Л. Мельник* спробували протрактувати термін «сталий розвиток підприємства» базуючись на системно-інтегрованому підході та вважають, що його логіка для господарської одиниці виражається у задоволенні її потреб, тобто отриманні прибутку та покращенні іміджу на конкуруючому ринку, зростанні продуктивності праці, оптимізації енергоспоживання, зниженні відходів, підтримки з боку органів місцевого самоврядування, виході на зовнішні ринки (*Andrushkiv & Mel'nyk, 2016*). *Н. Кирич* вважає, що економічний аспект сталого розвитку базується на теорії максимального потоку сукупного доходу, який може бути отриманий при збереженні сукупного капіталу, оптимальному використанні обмежених ресурсів і застосуванні нових технологій (*Kyrych, 2018*). *М. Медвідь* пов'язав управління сталим розвитком підприємства з економічністю (мінімізацією витрат) та результативністю (максимізацією результатів), що дозволяє задіяти в практику управління новий європейський досвід (*Medvid', 2016*). *О. Бобровська* визначає економічний розвиток як сукупність можливостей реалізації наявних ресурсів у господарської діяльності економічних суб'єктів (*Bobrovs'ka, 2016*). *Н. Афанасьєв та колектив авторів* під управлінням сталим розвитком підприємства розуміють процес формування нової властивості системи, що базується на забезпеченні зміни тільки її якісних характеристик (*Afanas'yev, Rogozhin, & Rudyka, 2015*). На думку *Ю. Харазішвілі та В.Ляшенко* сталий розвиток – інтегральна характеристика стану економічної системи, оскільки система включає ряд підсистем (найважливіших, взаємозв'язаних структурних складових розвитку економічної системи), які відображають функціонування окремих сфер економіки – економічної, соціальної екологічної (*Kharazishvili & Lyashenko, 2017*). *А. Гончаров* наголосив, що розвиток економічної системи являє собою сукупність ресурсних потенціалів, організаційних здібностей до формування та економічної готовності до втілення конкретних заходів по досягненню економічною системою розвитку сталого типу (*Goncharov, 2015*). *О. Боброва та І. Малайкина* відмітили, що трактування терміну «сталий розвиток» сфокусовано на соціальній, економічній та екологічній сферах взаємовідносин суспільства і господарюючих суб'єктів та характеризує процес розвитку на макро-, мезо- і мікрорівні (*Bobrova & Malaykina, 2018*). *Л. Волкова* під терміном «сталий розвиток підприємства» розуміє такий режим його функціонування, при якому, безумовно, виконуються оперативні, поточні й стратегічні плани роботи підприємства за рахунок реалізації на регулярній основі заходів щодо попередження, виявлення та нейтралізації ринкових загроз для виконання плану (*Volkova, 2016*). *Л. Томялойц* поєднує у понятті «сталий розвиток» економічне зростання і розвиток, які доповнюють один одне і не є антагоністичними довкіллю та суспільству (*Tomialojts, 2015*). *І. Чайківський* визначив сутність сталого розвитку у спроможності за рахунок мобілізації своїх внутрішніх резервів створити таку раціональну структуру виробництва, яка б при прояві випадкових зовнішніх впливів сприяла пом'якшенню несприятливих наслідків і одержанню мінімальних відхилень від сформованої тенденції розвитку (*Chajkivs'kyj, 2014*). *Р. Хольцман, Р. Пол та Х. Дорфман* характеризували сталий розвиток підприємства як його стійкість до зовнішніх шоків, що означає здатність системи адаптуватися до несподіваних змін економічних, демографічних і політичних умов (*Holzmann, Paul, Dorfman, 2015*). *Р. Менда* та *Я. Мільтенбург* запропонували цілісну методологію і деталізований процес створення виробничої стратегії, яка ґрунтується на результатах проведення аудиту і контролю економічної системи, що сприяє створенню виробничої стратегії розвитку підприємства (*Menda, 2014; Miltenburg, 2013*). На думку *С. Роланда, Т. Атамера, П. Нунеса* основні підходи до формування моделей регулювання економічного розвитку та підвищення конкурентоспроможності підприємств в ринкових умовах пов'язані з ефективністю використання ресурсів (*Roland, Atamer, Nunes, 2015*). Разом з цим у дослідженнях залишаються не розглянутими підходи щодо диференційованого вивчення складових процесу управління і формування інтегрованих цільових систем управління сталим економічним розвитком підприємства на основі моніторингу витрат та встановлення закономірностей зростання ефективності діяльності за функціональними ознаками.

2. Постановка проблеми

У сучасних умовах невизначеності зовнішнього середовища забезпечення сталого економічного розвитку підприємства готельно-ресторанної сфери входить до складу його найважливіших завдань і функцій, тому актуальним стає вирішення питання щодо формування цільової системи управління цим процесом.

Мета дослідження – обґрунтувати та сформувати оптимальну модель системи управління сталим економічним розвитком підприємства готельно-ресторанного господарства на основі системного, процесного і цільового методичних підходів.

3. Методи дослідження

У роботі застосовано системний, процесний і цільовий підходи щодо створення системи управління сталим економічним розвитком підприємства готельно-ресторанного господарства на основі моніторингу витрат. Використано методи теоретичного узагальнення та критичного аналізу – при визначенні підходів щодо формування системи управління сталим економічним розвитком підприємства, графічний – для наочного подання результатів дослідження, економіко-математичний – для визначення закономірностей динамічних змін в економічній системі, логічний – для встановлення принципіальної структури, взаємозв’язків результатів дослідження, побудови та обґрунтування предмету наукового дослідження.

4. Результати дослідження

Створення системи управління сталим економічним розвитком господарюючих одиниць готельно-ресторанної сфери на основі моніторингу витрат ґрунтується на визначенні їх диференційованого та інтегрованого впливу як елементів спожитих ресурсів на ефективність результатів діяльності. Сукупність використовуваних ресурсів формує ресурсний потенціал підприємства, що забезпечує мобілізацію наявних можливостей інтеграції взаємозв'язаних і взаємодіючих ресурсів підприємства з урахуванням ступеня їх взаємного впливу. Таким чином, підвищується продуктивність системи потенціалів, яка є більш ефективною, чим проста сума елементів. При цьому підвищення ефективності використання ресурсів зумовлює зниження витрат, а їх моніторинг сприяє проведенню структурно-компонентного аналізу показників за напрямами діяльності, що забезпечують сталий економічний розвиток підприємства готельно-ресторанної сфери.

В ході моніторингу визначають фактори, що впливають на варіабельність процесу управління, в якому використовують науково-обґрунтовані принципи, методи і підходи.

Динамічність, нестабільність і невизначеність сучасних умов функціонування підприємств готельно-ресторанного бізнесу викликають необхідність раціонального і ефективного управління їх виробничо-комерційною діяльністю з урахуванням всіх взаємодіючих елементів економічної системи господарюючих одиниць.

В рамках вирішення цієї проблеми доцільне використання принципів системного підходу.

Системний підхід використовують у взаємодії з цільовим підходом, який ґрунтується на розробці методології формування цільових функцій окремих блоків і процесів, які складають господарську діяльності для досягнення інтегрованого оптимального результату з найбільшою ефективністю.

Управління на основі цих підходів спрямоване на визначення та забезпечення ефективнішої взаємодії всіх елементів або підсистем і складових процесів соціально-економічної системи.

З наукової точки зору підприємство як система складається і характеризується певними властивостями, до яких відносяться:

– цілісність і роздільність на складові частини, тобто система представляє цілісну сукупність елементів, що взаємодіють один з одним і виконують певні функції для отримання заданих результатів (елементи системи можуть бути якісно різними, але відповідати умовам сумісності);
– наявність взаємозв'язків окремих елементів системи, що забезпечують її інтеграційні властивості;
– наявність у системи сукупних якостей, що визначають її властивості в цілому;
– наявність впорядкованої організаційної структури (*Volkova, 2016*).

Тобто підприємство готельно-ресторанного господарства є системою, в якій відображається технічна, економічна і організаційна єдність керованого об'єкту, і кожен елемент системи знаходиться під впливом вхідних дій та, у свою чергу, формує вихідні дії (*Рис. 1*).

Вхідною дією *E*, або входом, називається дія, що поступає на вхід від сукупності елементів $e_i(t)$, а вихідною дією *X* або виходом, називається вихідна дія, що виробляється сукупністю елементів $y_i(t)$ на виході.

Підприємства готельно-ресторанного бізнесу як відкриті системи мають різні виробничі, технологічні й організаційні структури, які складаються з сукупності елементів та функціонують за певними економіко-математичними законами. Для підтримки їх в рівноважному стані, а також для забезпечення прогресивного розвитку суб’єкта господарювання необхідно здійснювати моніторинг і контроль економічних показників, що відображають рівень його економічної стійкості. Здійснення господарських операцій підприємством пов’язано з виконанням наступних функції: виробничої, комерційної, адміністративно-збутової (маркетингової), фінансової, кадрової, інноваційно-інвестиційної та ін., які потребують витрат певних видів ресурсів, що характеризують входи системи, а також являють собою її елементи.

На практиці будь-яка система знаходиться під впливом обурень. Обурюючою дією $g(t)$ називається несподіваний вплив на елементи системи факторів зовнішнього середовища, що динамічно змінюються (*Vasylenko, 2014*).

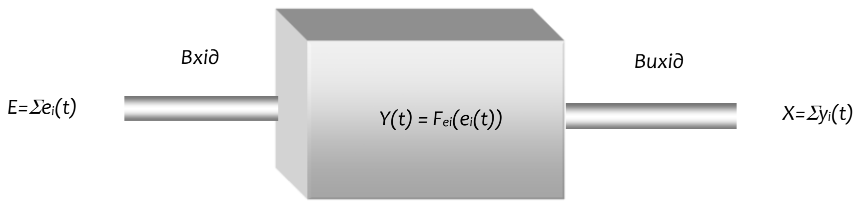

Рис. 1. Структурна схема підприємства готельно-ресторанного господарства як економічної системи

У загальному випадку кожен елемент перманентно знаходитися в деякому русі, тобто в динамічному режимі, і в окремий момент часу *t* елемент може характеризуватися конкретним станом, який можна представити у вигляді функціональної економіко-математичної залежності:

$$Y(t) = Fe(e(t)), \tag{1}$$

де *Fe* – функція, що описує поведінку елементу залежно від вхідної дії (впливу фактору).

Властивості окремого елементу описуються певними статичними і динамічними характеристиками, що впливають на сталий розвиток підприємства готельно-ресторанного типу. Особливості економічних систем, умов їх функціонування, разом з різноманіттям структур систем управління зумовлює сукупність законів управління. Узгодженість функціональних підсистем суб'єкту господарювання (блоків, підрозділів, напрямів діяльності, що виконуються за рахунок споживання певних видів ресурсів) забезпечується процесами управління шляхом надання цілеспрямованої дії на всі його складові елементи для досягнення запланованих результатів, тобто виконання цільових функцій. При цьому у всіх випадках необхідно забезпечувати дві основні компоненти будь-якого управління – стійкість і якість керуючих і керованих систем, а, отже, і процесу функціонування підприємства.

Стійкість системи – це необхідна, але недостатня умова її ефективної роботи. Система повинна характеризуватися певною якістю, а якість управління є властивістю, яка визначається:

– характеристиками руху системи до заданого цільового стану;
– рівнем досягнення заданого стану (параметрів економічного розвитку) відповідно до встановлених цільових функцій (*Andrushkiv, Mel'nyk, 2016*).

Функції, що виконуються підприємством готельно-ресторанного господарства, носять системоутворюючий характер. Зміна функцій під впливом зовнішніх або внутрішніх імпульсів (факторів), викликає зміну цільової дії, а отже, механізму функціонування і організаційної структури економічної системи, як в прогресивному, так і регресивному напрямі розвитку. Крім того, функції системи відображають її призначення і мають цільову спрямованість на отримання запланованих результатів.

Підприємство готельно-ресторанного господарства як система має внутрішні й зовнішні зв'язки, які носять матеріально-речовинний, фінансовий, інформаційний, техніко-технологічний та інший характер, обумовлений сукупністю видів діяльності й потенціалами використовуваних ресурсів, а також закономірностям їх взаємодії. Зовнішні зв'язки забезпечуються вхідними (процеси, ресурси) і вихідними (результати діяльності) елементами, внутрішній стан характеризується організаційно-економічною структурою, яка залежить від складу, якості, закономірностей та порядку зв'язку елементів і відповідає виконуваним функціям, і під їх впливом забезпечує певні властивості та стан системи.

Таким чином, розподіл процесів управління дає можливість розглядати діяльність підприємства готельно-ресторанного господарства як систему, що складається з керуючої й керованої підсистем, зв'язаних між собою передачею і перетворенням інформації. А якість функцій і структура взаємозв'язків компонентів системи впливають на її стійкість та економічний розвиток. Для встановлення закономірностей взаємодії структурних компонентів та складових загальної системи управління, доцільно виразити параметри, що їх характеризують, у виді змінних цільової економіко-математичної функції (*Рис. 2*).

Застосовуючи економіко-математичні закони функціонування систем, керуючу систему I_C можна охарактеризувати *i*-мірним вектором управління:

$$Y(t) = (y_1(t), y_2(t), \dots, y_i(t))^t, \tag{2}$$

де $y_i(t)$ – елементи вектору управління керуючої системи.

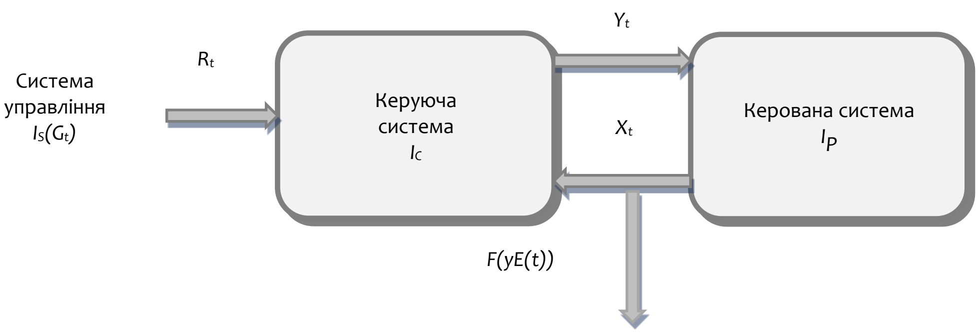

Рис. 2. Структура та зв'язки системи управління підприємством готельно-ресторанного господарства

Джерело: узагальнено автором.

Керована система I_P в сукупності з керуючою системою I_C утворюють систему управління, що представлена оператором I_S.

Керована система знаходиться під впливом обурення *t*-мірного вектору:

$$I_S = G(t) = (g_1(t), g_2(t), \dots, g_i(t))^t, \tag{3}$$

де $g_i(t)$ - елементи вектору системи управління I_S.

На керуючу систему I_C подається в загальному випадку *n*-мірний вектор задач (цілей):

$$I_C = R(t) = (r_1(t), r_2(t), \dots, r_i(t))^t, \tag{4}$$

де $r_1(t)$ – елементи вектору задач керуючої системи I_C.

Відповідно до цього вектор управління *Y(t)* формується залежно від змін значення розузгодження елементів (*Vasylenko, 2014*):

$$E(t) = R(t) - X(t), \quad (5)$$

де $E(t) = (e_1(t), e_2(t),\dots, e_l(t))^t$ являє собою *n*-мірний вектор як функцію за цільовим призначенням $Y(t) = F(y(E(t))$.

Таким чином, параметри $E(t)$ можна вважати внутрішнім станом системи, а функцію $F(y(E(t))$ – економіко-математичною залежністю, що описує особливості й закономірності взаємодії процесів (елементів), які відбуваються в системі й спрямовані на отримання цільових результатів.

З позиції підприємств стійкість можна розглядати як здатність системи зберігати свій працездатний стан щодо досягнення запланованих результатів при різних обурюючих діях (впливу факторів). Стійкість повинна забезпечуватися в будь-яких умовах і ситуація, що виникають у підприємства як економічної системи й в навколишньому середовищі (*Vasylenko, 2014*).

Для досягнення економічною системою протидії виникаючим обуренням, необхідно вирішити наступні завдання:

– виявити особливості самоорганізації системи і на основі функції цілі побудувати економіко-математичні моделі щодо визначення закономірностей взаємовпливу її внутрішніх процесів (елементів), можливостей економічного зростання і прогресивного розвитку;
– сформувати механізм сталого економічного розвитку підприємства як системи;
– розробити концептуальну модель сталого економічного розвитку суб’єкту господарювання;
– розробити стратегічні напрями сталого розвитку підприємства (системи) з урахуванням закономірностей його функціонування і наявних ресурсних потенціалів.

Отже, управління підприємством готельно-ресторанного бізнесу як системою і окремими його елементами на основі системного підходу характеризується складними процесами взаємодії елементів різних підсистем, які задіяні в управлінні господарюючою одиницею.

Для формування системи управління сталим економічним розвитком підприємства готельно-ресторанного господарства на основі моніторингу витрат у сукупності з системним та цільовим підходами доцільно використання процесного, за допомогою якого досліджуються процеси, що відбуваються на підприємстві (тобто у економічній системі) та впливають на його сталий економічний розвиток за цільовим спрямуванням. У економічних і тлумачних словниках слово «процес» (від лат. processus – просування) тлумачиться як: 1) послідовна зміна станів стадій розвитку; 2) сукупність послідовних дій для досягнення будь-якого результату (*Ekonomicheskiy slovar', 2018; Nechayev, Mikhaylushkin, 2016; Rossik, Klyuyev, 2015*). В термінах міжнародного стандарту ISO 9000:2001 вказано, що «процес - сукупність взаємозв'язаних або взаємодіючих видів діяльності, які перетворюють «входи» в «виходи» (*DSTU ISO 9000-2001*).

Найчастіше під процесом розуміється логічна послідовність дій в часі, що приводить до послідовної зміни проміжних станів системи, в якій цей процес протікає, а також перетворює початкові (вхідні) ресурси в кінцеві (вихідні результати) (*Ekonomicheskiy slovar', 2018; Nechayev, Mikhaylushkin, 2016; Rossik, Klyuyev, 2015*). Тобто процес характеризується протяжністю в часі, наявністю чітко визначених ресурсів, початкових і кінцевих подій, а також перехідних станів залежно від стадій процесу. Для процесу як певній сукупності й послідовності дій характерні: вхід, де використовуються початкові ресурси, і, як наслідок, створюються витрати, і вихід, що забезпечує результат.

При реалізації будь-якого процесу виникають зворотні зв'язки із зовнішнім середовищем, які, зокрема, носять й інформаційний характер. Моніторинг необхідної інформації дозволяє аналізувати та контролювати проведення бізнес-процесів, що спрямовані на досягнення мети і місії організації. Даний підхід до управління сприяє створенню організаційної структури, за допомогою якої можливе постійне удосконалення внутрішніх процесів і поліпшення якості кінцевого продукту, що сприяє підвищенню ефективності результатів діяльності підприємства готельно-ресторанного бізнесу, а, отже, і забезпечення його сталого економічного розвитку.

При цьому управління розглядається як процес, що складається з серії безперервних взаємозв'язаних дій, що в сукупності складають набір управлінських функцій, кожна з яких, у свою чергу, представляє процес. Таким чином, процес управління є загальною сумою всіх функцій (*Andrushkiv, Mel'nyk, 2016*). А сам процесний підхід – це підхід, відповідно до якого, вся діяльність організації розглядається як сукупність взаємозв'язаних і взаємодіючих процесів (*DSTU ISO 9000-2001*). Застосування процесного підходу до управління витратами і економічним розвитком підприємства викликає необхідність ідентифікації та диференціації процесів, що відбуваються, визначення параметрів входів і виходів, встановлення певних вимог до процесів та їх взаємодії. При цьому метою управління сталим економічним розвитком суб'єкта господарювання на основі процесного підходу є максимально можливе досягнення запланованих результатів найбільш ефективним способом шляхом максимізації прибутку та мінімізації витрат на прогресивній основі. Згідно процесного підходу модель системи управління сталим економічним розвитком на основі моніторингу витрат підприємства готельно-ресторанного господарства схематично зображено на *Рис. 3*.

У розробленої на базі процесного підходу моделі системи управління, що представлена на рисунку 3, система зв'язку утворює прямий канал передачі вхідної інформації $Y(I_C)$ і зворотний канал передачі інформації про стан об'єкту управління керуючої системі $X(I_P)$.

На основі моніторингу, який включає збір, аналіз і оцінку інформації про стан економічних показників підприємства готельно-ресторанного бізнесу, керуюча система передає цільову керуючу дію на об'єкт управління. Використання зворотного зв'язку в процесному підході до управління дає можливість оцінити обурюючі дії факторів зовнішнього середовища та вплив цільової керуючої функції на елементи економічної системи (види діяльності, процеси, ресурси та ін.), здійснити прогнозування та оптимізацію процесів, що відбуваються, за допомогою створених економіко-математичних моделей та встановлених закономірностей взаємовпливу їх елементів. Таким чином, процесний підхід ґрунтується на таких практичних властивостях:

– зміна керованих параметрів входу забезпечує отримання заданих результатів цільової функції на виході;
– наявність об'єктивних і закономірних зв'язків між вхідними та результуючими показниками функціонування;
– можливість оцінки ступеня зміни результатів на виході за рахунок планування змін параметрів входу;
– можливість кількісного і якісного вибору процесів, їх інтеграції та інтерпретації.

Тобто процесний підхід до організації й управління підприємством орієнтує його діяльності на диференціювання бізнес-процесів, а систему управління - на управління як кожним бізнес-процесом окремо, так і всією їх сукупністю. Для забезпечення економічного зростання суб'єктів господарювання в сучасних умовах виникає необхідність у створенні єдиної системи, здатної ефективно адаптуватися до змін навколишнього середовища на основі інтеграції техніки, технології, економіки, методів планування і управління.

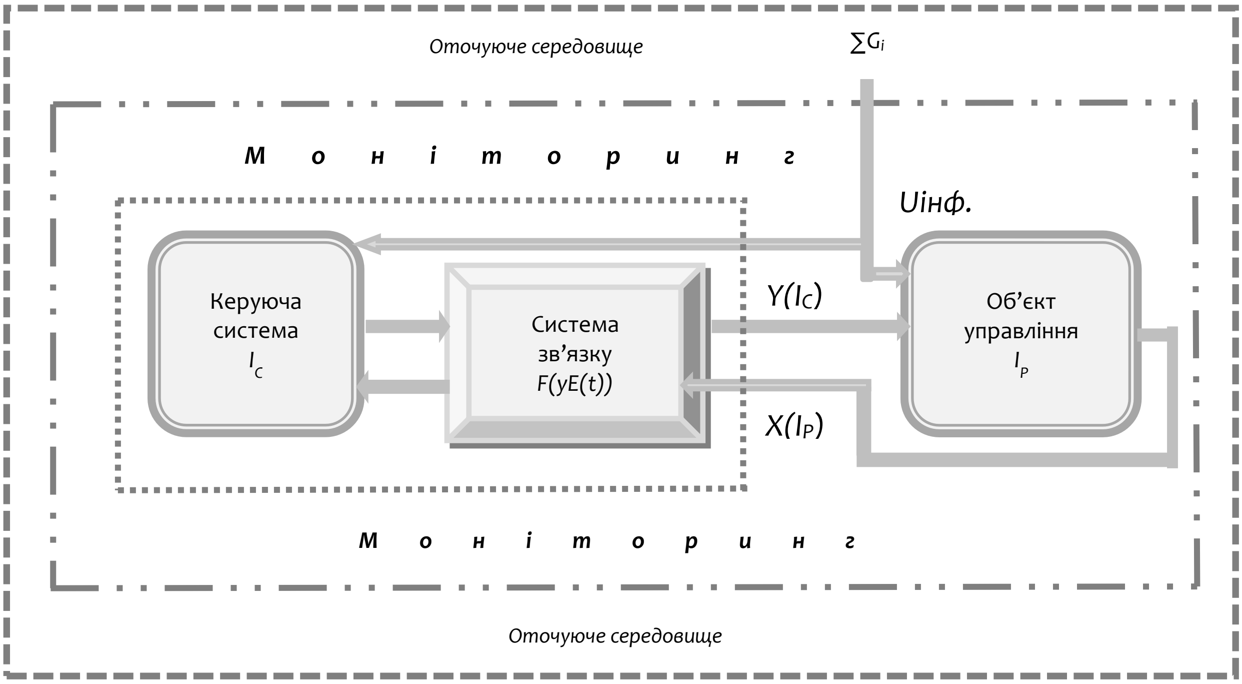

Рис. 3. Модель системи управління сталим економічним розвитком підприємства готельно-ресторанного господарства на основі моніторингу витрат

Джерело: розроблено автором.

5. Висновки

Управлінська діяльність, що базується на системному, процесному і цільовому методичних підходах, спрямована на приведення економічної системи (підприємства) в бажаний стан для забезпечення стійкого функціонування суб'єкта господарювання в зовнішньому середовищі впродовж тривалого періоду часу. Тому процес формування системи управління сталим економічним розвитком підприємства готельно-ресторанного господарства складається з таких елементів:

– визначення цілей та формулювання завдань сталого економічного розвитку підприємства;
– визначення сукупності елементів виробничо-комерційної діяльності та факторів, що впливають на її ефективність;
– визначення методів оцінки економічної стійкості підприємства, використовуваних критеріїв і структури їх взаємодії;
– формування цільових напрямків економічного розвитку підприємства і порядку взаємодії впливаючих та результуючих показників взаємозв'язаних процесів;
– формування методології управління сталим розвитком підприємства на основі сукупності методів аналізу, оцінки, прогнозування, моніторингу і контролю.

Таким чином, застосування запропонованих методичних підходів в управлінні підприємством сфери готельно-ресторанного бізнесу, спрямовано на формування оптимальної цільової системи управління, яка дозволяє встановити взаємозв'язки між процесами, що відбуваються, і економічними показниками, які їх характеризують, збільшити ефективність виробничо-збутової діяльності, раціоналізувати організаційну структуру, підвищити швидкість ухвалення управлінських рішень і гнучкість реагування на зміну впливаючих факторів зовнішнього і внутрішнього середовища, а отже, забезпечити сталий розвиток суб'єкта господарювання.

Отримані результати дослідження забезпечують можливості для побудови економіко-математичних моделей на основі функції цілі, що описують кількісний диференційований та інтегрований вплив факторів (елементів системи) на результати (вихід системи), проведення моніторингу, аналізу, оцінки, прогнозування і планування величини показників діяльності підприємства, що, в свою чергу, дає змогу сформувати стратегію і ефективний механізм управління його сталим економічним розвитком.

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Month of the year effect in the cryptocurrency market and portfolio management

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Purpose – to investigate the Month of the year effect in the cryptocurrency market.

Design/Method/Research Approach. A number of parametric and non-parametric technics are used, including average analysis, Student's t-test, ANOVA, Kruskal-Wallis statistic test, and regression analysis with the use of dummy variables.

Findings. In general (case of overall testing – when all data is analyzed at once) calendar the Month of the Year Effect is not present in the cryptocurrency market. But results of separate testing (data from the period "suspicious for being anomaly" with all the rest of the data, except the values which belong to the "anomaly data set") shows that July and August returns are much lower than returns on other months. These are the worst months to buy Bitcoins.

Theoretical implications. Results of this paper claim to find some holes in the efficiency of the cryptocurrency market, which can be exploited. This contradicts the Efficient Market Hypothesis.

Practical implications. Results of this paper claim to find some holes in the efficiency of the cryptocurrency market, which can be exploited. This provides opportunities for effective portfolio management in the cryptocurrency market.

Originality/Value. This paper is the first to explore Month of the Year Effect in the cryptocurrency market.

Paper type – empirical.

Keywords: Calendar Anomalies; seasonal effects; Efficient Market Hypothesis; Cryptocurrency; Bitcoin.

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Ефект місяця року на ринку криптовалют і портфельний менеджмент

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Мета роботи – дослідити ефект місяця року на ринку криптовалют.

Дизайн/Метод/Підхід дослідження. Застосовано ряд параметричних і непараметричних методів, у тому числі аналіз середніх, t-критерій Стьюдента, ANOVA, статистичний тест Крускала-Уолліса, регресійний аналіз із використанням фіктивних змінних.

Результати дослідження. В цілому (в разі загального тестування: всі дані проаналізовано одночасно) ефект місяця року не присутній на ринку криптовалют. Але результати окремого тестування (дані за період порівняно з усіма іншими даними, за винятком значень, які відносять до цього періоду), показали зміну цін на біткоіни в липні і в серпні набагато нижчу, ніж за інші місяці. Це найгірші місяці для покупки біткоінів.

Теоретичне значення дослідження. Згідно з результатами даного дослідження з'ясовано, що на ринку криптовалют присутні «провали» в ефективності, які можна застосувати з метою отримання надприбутків. Це суперечить гіпотезі ефективного ринку.

Практичне значення дослідження. Згідно з результатами даного дослідження, такі «провали» в ефективності можна застосувати під час побудови і оптимізації торгових стратегій. Це надає можливості для більш ефективного управління інвестиційним портфелем на ринку криптовалют.

Оригінальність/Цінність/Наукова новизна дослідження. Ефект місяця року на ринку криптовалют до цього не розглядався в науковій літературі.

Тип статті – емпіричний.

Ключові слова: календарні аномалії; сезонні ефекти; Гіпотеза ефективного ринку; криптовалюти; біткоін.

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Эффект месяца года на рынке криптовалют и портфельный менеджмент

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Цель работы – исследовать эффект месяца года на рынке криптовалют.

Дизайн/Метод/Подход исследования. Применен ряд параметрических и непараметрических методов, в том числе анализ средних, t-критерий Стьюдента, ANOVA, статистический тест Крускала-Уоллиса, регрессионный анализ с использованием фиктивных переменных.

Результаты исследования. В целом (в случае общего тестирования: все данные анализируют одновременно) эффект месяца года не присутствует на рынке криптовалют. Но результаты отдельного тестирования (данные за период сравнены со всеми остальными данными, за исключением значений, которые отнесены к этому периоду), показали изменение цен на биткоины в июле и августе намного ниже, чем за другие месяцы. Это худшие месяцы для покупки биткоина.

Теоретическое значение исследования. Согласно результатам данного исследования выявлено, что на рынке криптовалют существуют «провалы» в эффективности, которые можно использовать с целью получения сверхприбыли. Это противоречит гипотезе эффективного рынка.

Практическое значение исследования. Согласно результатам данного исследования, такие «провалы» в эффективности можно использовать при построении и оптимизации торговых стратегий. Это предоставляет возможности для более эффективного управления инвестиционным портфелем на рынке криптовалют.

Оригинальность/Ценность/Научная новизна исследования. Эффект месяца года на рынке криптовалют ранее не рассматривался в научной литературе.

Тип статьи – эмпирический.

Ключевые слова: календарные аномалии; сезонные эффекты; Гипотеза эффективного рынка; криптовалюты; биткоин.

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1. Introduction

Calendar anomalies (the Day of the Week Effect, the Turn of the Month Effect, the Month of the Year Effect, the January Effect, the Holiday Effect, the Halloween Effect etc.) is something that shouldn't exist according to the Efficient Market Hypothesis (EMH, *see Fama, 1965*). However there are many evidences that they exist in real life (*Fields, 1931; Cross, 1973; Jensen, 1978; French, 1980; Bildik, 2004; Mynhardt & Plastun, 2013; many others*).

The Month of the Year Effect (returns vary for different months in a year) is one of the most discussed calendar anomalies for the case of stock market (*Gultekin & Gultekin, 1983; Lakonishok & Smidt, 1988; Wilson & Jones, 1993; Wachtel, 1942; Giovanis, 2008; Zhang and Jacobsen, 2012; Compton et al, 2013; Caporale & Plastun, 2017*).

However to date no study has analysed such issues in the context of the cryptocurrency market.

Cryptocurrency market is rather new and might still be relatively inefficient and it might be a good basis for the Month of the Year Effect existence.

We focus in particular on the Month of the Year Effect, and apply a variety of statistical methods (average analysis, Student's t-test, ANOVA, the Kruskal-Wallis, and regression analysis with dummy variables) to examine whether or not it exists in the cryptocurrency market. The object of analysis is Bitcoin monthly returns over the period 2013-2019.

The paper is structured as follows: Section 2 briefly reviews the literature on the Month of the Year Effect; Section 3 outlines the methodology; Section 4 presents the empirical results; Section 5 offers some concluding remarks.

2. Theoretical background

Calendar anomalies (calendar effects, seasonal effects) are anomalies in returns, which depend on the calendar. The most important calendar anomalies are Day of the Week Effect; Turn of the Month Effect; Turn of the Year Effect; Month of the Year Effect; January Effect; Holiday Effect; Halloween Effect. According to the Month of the Year Effect returns vary for different months in a year.

For example, there are evidences that January show higher returns than any other month of the year (*Rozeff and Kinney, 1976; Wachtel, 1942*).

One of the calendar anomalies based from the "month of the Year Effect" family is so called Mark Twain effect. It claims that stock returns in October are lower than in other months.

Bildik (*2004*) use Turkish stock market as an object of analysis and also find that calendar anomalies existed in stock returns and trading volume.

Giovanis (*2008*) using GARCH estimation tested the month of the year effect using data from Athens Stock Exchange Market. They found evidences in favor of the January effect.

Tangjitprom (*2011*) analyzed Thai stock market (SET index) during 1988 to 2009. Using multiple regression techniques with dummy variables they show that returns are abnormally high during December and January.

Stoica and Diaconașu (*2011*) explored Central Europe stock markets over the period 2000 - 2010 and in the majority of the cases find evidences in favor of the existence of the month of the year effect and the existence of the January effect.

Compton et al (*2013*) analyzing monthly seasonality in the Russian stock market over the period 2000-2010 find strong evidence of a persistent monthly pattern (but no January effect).

Borowski (*2015*) analyzed Month of the Year Effect in the commodity market and provide evidences in favor of this anomaly.

Contrary to previous results *Ali et al* (*2009*) who analyzed Malaysian stock index over the period from 1994 to 2004 using GARCH (1 1)-M model can't find any clear pattern of January effect. Similar results are obtained by *Alshimmiri* (*2011*) for the case of Kuwait Stock Exchange over the period 1984-2000: no January effect was detected.

But at the same time returns during summer months (May-September) tend to be significantly higher than returns during other months of the year (October-April).

Wong et al (*2006*) based on Singapore stock market data over the period 1993-2005 reveals that the Month of the Year Effect has largely disappeared.

Silva (*2010*) explored Portuguese stock market during 1998-2008 and also find no evidences in favor or the January anomaly.

As can be seen the evidences are mixed. Possible explanation is market evolution – anomalies are fading in time (*Plastun et al., 2019*).

The cryptocurrency market represents a particularly interesting case being rather new, relatively unexplored and at the same time extremely vulnerable to anomalies, given its high volatility relative to the FOREX, stock and commodity markets etc. (*Cheung et al., 2015; Urquhart, 2016; Aalborg et al., 2019*).

Only few market anomalies are already discussed for the case of the cryptocurrency market. For example *Caporale and Plastun* (*2019*) explore overreactions in the cryptocurrency market and find evidence of price patterns after overreactions. *Chevapatrakul and Mascia* (*2019*) using the quantile autoregressive model show that days with extremely negative returns are likely to be followed by periods characterised by negative returns and weekly positive returns as Bitcoin prices continue to rise.

As for the calendar effects, *Kurihara and Fukushima* (*2017*) and *Caporale and Plastun* (*2018*) explored the day of the week effect in the cryptocurrency market and find evidences in its favor. But the Month of the Year Effect is still unexplored.

3. Problem statement

The purpose of this paper is to investigate the Month of the year effect in the cryptocurrency market.

4. Methods and Data

We use monthly data for Bitcoin. The sample covers the period from June 2010 (the first available observation) to the end May 2019.

The data source is *CoinMarketCap* (*https://coinmarketcap.com/coins/*). *CoinMarketCap* provides volume-weighted average prices reported for each crypto exchange (for example, BitCoin prices are the average of those from 400 markets). As the result this is the most reliable source of information about prices in the cryptocurrency market.

We use Bitcoin data because this cryptocurrency has the highest market capitalisation and longest span of data (*see Table 1*).

Table 1

Top cryptocurrencies by capitalisation (01.05.2019)*

№	Name	Market Cap	Price	Circulating Supply	Data start from
1	Bitcoin	$148 657 197 170	$8 267,84	17 980 175 BTC	28 Apr 2013
2	Ethereum	$19 674 550 330	$182,07	108 059 235 ETH	07 Aug 2015
3	Ripple	$12 017 970 035	$0,278408	43 166 787 298 XRP	04 Aug 2013
4	Bitcoin Cash	$4 236 366 686	$234,76	18 045 263 BCH	23 Jul 2017
5	Litecoin	$3 659 603 443	$57,70	63 420 942 LTC	28 Apr 2013

*Source: compiled by Authors based on (CoinMarketCap, 2019).

To explore the Month of the Year effect the following hypotheses are tested:

Hypothesis 1 (H1): Returns are different on different months of the year.

Hypothesis 2 (H2): Month of the Year effect provides opportunities for abnormal profits generation from trading in the cryptocurrency market.

To examine whether there is a Month of the Year effect we use the following techniques:

– average analysis;
– parametric tests (Student's t-tests, ANOVA);
– non-parametric tests (Kruskal -Wallis test);
– regression analysis with dummy variables.

Returns are computed as follows:

$$R_i = (\frac{Close_i}{Close_{i-1}} - 1) \times 100\% , \quad (1)$$

where R_i – returns on the *i-th* day in %;
$Close_i$ – close price on the *i-th* day;
$Close_{i-1}$ – close price on the *(i-1)-th* day.

Average analysis provides preliminary evidence on whether there are differences between returns on different months of the year.

A number of statistical tests, both parametric (in the case of normally distributed data) and non-parametric (in the case of non-normal distributions); they include Student's t-tests, ANOVA analysis, and Kruskal-Wallis tests are carried out for further evidences in favor or against differences between returns on different months of the year.

We test Null Hypothesis (*H0*): analyzed data sets (returns of specific month) belong to the same general population (the whole data set). In case of H0 rejection we get evidence in favor of anomaly. In other case (*H0* can not be rejected) no anomaly is observed.

We use Student's t-tests, ANOVA and Kruskal -Wallis test in two variants:

– overall testing – when all data is analyzed at once;
– separate testing – we compare data from the period "suspicious for being anomaly" (month of interest) with all the rest of the data, except the values which belong to the "anomaly data set" (month of interest returns).

We also run multiple regressions including a dummy variable to identify certain calendar anomaly:

$$Y_t = a_0 + a_1 D_{1t} + a_2 D_{2t} + \cdots + b_n Dn_t + \varepsilon_t, \quad (2)$$

where Y_t – return on the period t;
a_n – mean return for each month;
D_{nt} – dummy variable for each month, equal to 0 or 1. D_{nt} is 1 when mean return occurs on *n-th* month otherwise it is 0.
ε_t – random error term for month t.

The size, sign and statistical significance of the dummy coefficients provide information about possible anomalies.

4. Empirical results

Visual analysis (*Fig. 1*) gives clear signals in favor of this anomaly. Returns on March and October are 3-4 times higher than on other months. July, August and September look like the worth months for Bitcoin buyers. A "W" pattern is observed in Bitcoin monthly returns with peaks in March and October. As for the January effect and Mark Twain effect, there are no evidences of them in the Bitcoin returns.

Statistical tests show mixed results. According to t-test (*Table 2*) returns for some of the months statistically differ from the all other data. This evidences in favor of the anomaly and confirms the Month of the Year Effect.

ANOVA analysis (*Table 3*) overall does not confirm the anomaly. Overall data set analysis shows no statistically significant differences between different months and the whole data set. Nevertheless for the case of separate testing returns of August happened to be statistically different from the all other data excluding returns on August. So anomaly is only partially confirmed.

Non-parametric Kruskal-Wallis test (*Table 4*) for the case of overall data set does not confirm the anomaly. But separate testing results show the presence of statistically significant differences in returns on February, July and August which can be treated as evidence in favor of the Month of the Year Effect.

Regression analysis with dummy variables of the Month of the Year Effect finds no evidences in favor of this anomaly (*Table 5*). All the slopes are statistically insignificant (p-values are much higher than 0,05) as well as overall model (F is very low).

To summarize empirical results we form the following table (*See Table 6*).

As can be seen in general this anomaly is not observed in the cryptocurrency market (case of Bitcoin). But Bitcoin prices provide some anomalous evidences in dynamics of the July and August (abnormally lower than in other months of the year).

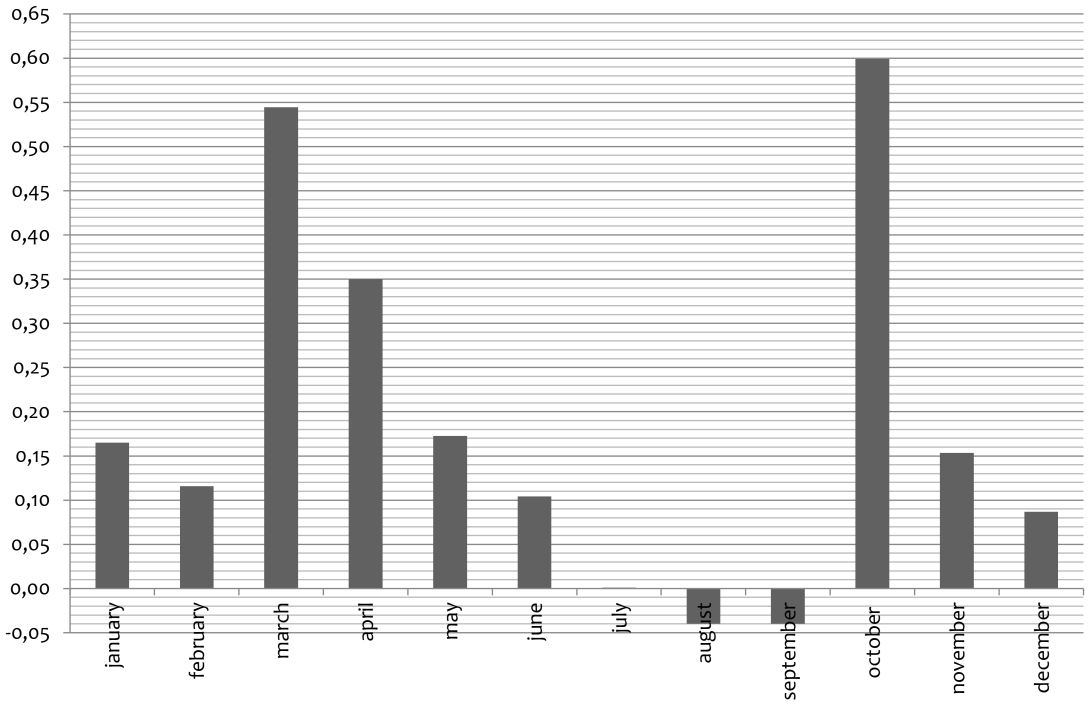

Fig. 1. Average analysis: case of Bitcoin returns*

*Source: compiled based on Author's calculations.

Table 2

T-test of the Month of the Year Effect (t-critical (p=0,95) = 2.15)*

Period	All data excluding specific month		Specific month		t-criterion	Null hypothesis	Anomaly status
	Average	Standard deviation	Average	Standard deviation			
January	0,22	0,30	0,17	0,33	-0,78	Not rejected	Not confirmed
February	0,22	0,31	0,12	0,64	-0,83	Not rejected	Not confirmed
March	0,18	0,23	0,54	1,11	1,62	Not rejected	Not confirmed
April	0,20	0,27	0,35	0,53	1,38	Not rejected	Not confirmed
May	0,22	0,30	0,17	0,31	-0,71	Not rejected	Not confirmed
June	0,23	0,31	0,10	0,19	-2,90	Rejected	Confirmed
July	0,23	0,30	0,00	0,31	-3,58	Rejected	Confirmed
August	0,24	0,30	-0,04	0,17	-7,19	Rejected	Confirmed
September	0,20	0,25	-0,04	0,17	-6,58	Rejected	Confirmed
October	0,18	0,30	0,60	1,56	1,34	Not rejected	Not confirmed
November	0,22	0,31	0,15	0,30	-1,05	Not rejected	Not confirmed
December	0,23	0,28	0,09	0,35	-1,93	Not rejected	Not confirmed

*Source: compiled based on Author's calculations.

Table 3

ANOVA test of the Month of the Year Effect

Period	F	p-value	F critical	Null hypothesis	Anomaly status
Overall	0,80	0,64	1,89	Not rejected	Not confirmed
January	0,13	0,72	4,49	Not rejected	Not confirmed
February	0,21	0,65	4,49	Not rejected	Not confirmed
March	0,91	0,35	4,49	Not rejected	Not confirmed
April	0,55	0,47	4,49	Not rejected	Not confirmed
May	0,10	0,75	4,49	Not rejected	Not confirmed
June	1,06	0,32	4,49	Not rejected	Not confirmed
July	2,60	0,13	4,49	Not rejected	Not confirmed
August	5,88	0,03	4,49	Rejected	Confirmed
September	0,21	0,65	4,49	Not rejected	Not confirmed
October	0,63	0,44	4,49	Not rejected	Not confirmed
November	0,22	0,65	4,49	Not rejected	Not confirmed
December	0,87	0,37	4,49	Not rejected	Not confirmed

*Source: compiled based on Author's calculations.

Table 4

Kruskal-Wallis test of the Month of the Year Effect*

Period	Adjusted H	d.f.	P value	Critical value	Null hypothesis	Anomaly status
Overall	12,08	11	0,36	19,68	Not rejected	Not confirmed
January	0,00	1	0,96	3,84	Not rejected	Not confirmed
February	5,07	1	0,02	3,84	Rejected	Confirmed
March	0,16	1	0,69	3,84	Not rejected	Not confirmed
April	0,05	1	0,83	3,84	Not rejected	Not confirmed
May	0,05	1	0,83	3,84	Not rejected	Not confirmed
June	0,24	1	0,63	3,84	Not rejected	Not confirmed
July	4,31	1	0,04	3,84	Rejected	Confirmed
August	5,48	1	0,02	3,84	Rejected	Confirmed
September	0,05	1	0,83	3,84	Not rejected	Not confirmed
October	0,05	1	0,83	3,84	Not rejected	Not confirmed
November	0,10	1	0,76	3,84	Not rejected	Not confirmed
December	1,22	1	0,27	3,84	Not rejected	Not confirmed

*Source: compiled based on Author's calculations.

Table 5

Regression analysis with dummy variables of the Month of the Year Effect*

Parameter	Slope coefficient	p-value
January (a_0)	-0,165196	0,464480
February (a_1)	-0,020526	0,877017
March (a_2)	0,157744	0,236028
April (a_3)	0,076826	0,562771
May (a_4)	0,003030	0,981775
June (a_5)	-0,025402	0,848133
July (a_6)	-0,068313	0,606763
August (a_7)	-0,085275	0,520711
September (a_8)	0,065532	0,621468
October (a_9)	0,180435	0,175768
November (a_{10})	-0,004872	0,970697
December (a_{11})	-0,032599	0,805877
F-test	0,7965	0,643000
Multiple R	0,29	
Anomaly	not confirmed	

*Source: compiled based on Author's calculations.

Table 6

Overall results for the case of Bitcoin*

Month/Methodology	Average analysis	Student's t-test	ANOVA analysis	Kruskal -Wallis test	Regression analysis with dummies	Overall
January	-	-	-	-	-	0
February	-	-	-	+	-	1
March	+	-	-	-	-	1
April	-	-	-	-	-	0
May	-	-	-	-	-	0
June	+	+	-	-	-	2
July	+	+	-	+	-	3
August	+	+	+	+	-	4
September	-	-	-	-	-	0
October	+	-	-	-	-	1
November	-	-	-	-	-	0
December	-	-	-	-	-	0

*Source: compiled based on Author's calculations.

5. Conclusions

In this paper we have examined the Month of the Year Effect in the cryptocurrency market. To do this we have used different methodologies (average analysis, parametric tests (Student's t-tests, ANOVA), non-parametric tests (Kruskal -Wallis test) and regression analysis with dummy variables) applying to the Bitcoin monthly data over the period 2013-2019.

The following hypotheses of interest are tested. (*H1*): Returns are different on different months of the year; (*H2*): Month of the Year effect provides opportunities for abnormal profits generation from trading in the cryptocurrency market.

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Entrepreneurship strategy for improving business performance using internet technology-based business application

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Purpose – to conduct an empirical test over the effect of entrepreneurship competency on business performance using Internet technology-based business applications.

Design/Method/Approach. The research population is from small-and-medium Enterprises (SMEs) in the city of Tarakan. The determined sample is based on the observed area; hence, the technique is called probability sampling area. The data analysis technique is Partial Least Square-Structural Equation Modelling (PLS-SEM), run by WarpPls 6.0.

Findings. This research's results indicate that entrepreneurship competency has a positive impact on Internet technology-based business applications. Besides, internet technology-based business application mediates the effect of entrepreneurship competency on business performance.

Theoretical implications. The results support the Resource-Based View Theory, stating that the competitive advantage of an enterprise is derived from its unique resource.

Practical implications. Internet technology-based business applications can be used as entrepreneurship strategies to develop business performance.

Originality/Value. The originality of this research is the internet technology-based business application as a mediating variable between entrepreneurship competence and business performance.

Research limitations/Future research. The research has its limitations; it only uses limited SME research samples in the city of Tarakan. Future research can expand the sample through other Indonesian cities.

Paper type – empirical.

Keywords: entrepreneurship; competency; SMEs; internet technology; online business.

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Підприємницька стратегія підвищення ефективності бізнесу на основі Інтернет-технологій з використанням бізнес-додатків

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Мета роботи – провести емпіричну перевірку впливу підприємницької компетентності на ефективність бізнесу з використанням бізнес-додатків на базі Інтернет-технологій.

Дизайн/Метод/Підхід дослідження. Дослідницька група – - представники малих та середніх підприємств (МСП) у місті Таракан. Визначений зразок ґрунтується на спостережуваній площі; застосована методика – метод області імовірнісної вибірки. Метод аналізу даних – часткове моделювання квадратних структурних рівнянь (PLS-SEM), розроблене WarpPls 6.0.

Результати дослідження. Показано, що компетентність підприємництва має позитивний вплив на бізнес-додатки, засновані на Інтернет-технологіях. Крім того, бізнес-додаток на базі Інтернет-технологій опосередковує вплив компетентності підприємництва на ефективність бізнесу.

Теоретичне значення дослідження. Результатами дослідження підтверджено теорію поглядів на основі ресурсів та заявлено, що конкурентна перевага підприємства походить з його унікального ресурсу.

Практичне значення дослідження. Бізнес-додатки, засновані на Інтернет-технологіях, можна застосувати як стратегії підприємництва для підвищення ефективності бізнесу.

Оригінальність/Цінність/Наукова новизна дослідження. Оригінальність цього дослідження полягає у характеристиці бізнес-додатків, що базуються на Інтернет-технологіях, як опосередкованих змінних між компетенцією підприємництва та результатами бізнесу.

Обмеження дослідження/Перспективи подальших досліджень. Дослідження має свої обмеження, у ньому використано лише обмежені данні про малий та середній бізнесу у місті Таракан. У майбутніх дослідженнях вибірка може бути розширена у бік інших міст Індонезії.

Тип статті – емпіричний.

Ключові слова: підприємництво; компетентність; МСП; Інтернет-технології; Інтернет-бізнес.

Предпринимательская стратегия повышения эффективности бизнеса на основе интернет-технологий с использованием бизнес-приложений

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Цель работы – провести эмпирическую проверку влияния предпринимательской компетентности на эффективность бизнеса с использованием бизнес-приложений на основе Интернет-технологий.

Дизайн/Метод/Подход исследования. Исследовательская группа – представители малых и средних предприятий (МСП) в городе Таракан. Определенный образец основан на наблюдаемой области; использованная методика – метод области вероятностной выборки. Метод анализа данных - это моделирование уравнений частичных наименьших квадратов (PLS-SEM), разработанное WarpPls 6.0.

Результаты исследования. Показано, что предпринимательская компетентность положительно влияет на бизнес-приложения, основанные на интернет-технологиях. Кроме того, бизнес-приложения, основанные на интернет-технологиях, опосредуют влияние предпринимательской компетентности на эффективность бизнеса.

Теоретическое значение исследования. Результатами исследования подтверждается теория представления на основе ресурсов и утверждается, что конкурентное преимущество предприятия основано на его уникальном ресурсе.

Практическое значение исследования. Бизнес-приложения, основанные на интернет-технологиях, могут использоваться как предпринимательские стратегии для повышения эффективности бизнеса.

Оригинальность/Ценность/Научная новизна исследования. Оригинальность этого исследования заключается в характеристике бизнес-приложений, основанных на интернет-технологиях, как посредниках между предпринимательской компетенцией и эффективностью бизнеса.

Ограничение исследования/Перспективы дальнейших исследований. Исследование имеет свои ограничения; он использует только ограниченные исследовательские данные о МСП в городе Таракан. Будущие исследования могут расширить выборку из других индонезийских городов.

Тип статьи – эмпирический.

Ключевые слова: предпринимательство; компетенция; МСП; Интернет-технологии; Интернет-бизнес.

1. Introduction

Entrepreneurship culture is a fundamental tool to improve the social and economic standards of the nation (*Roblesa & Rodrigueza, 2015*). Developing this entrepreneurship culture, therefore, is important to create economic growth. Entrepreneurship success is determined by an entrepreneur's competency, and an entrepreneur's competency directly affects business performance success (*Camuffo, Gerli, & Gubitta, 2012*). Competency, knowledge, creativity, imagination, and ability to capture the opportunity are important factors that affect business success not only now but also in the future; and all of them represent incentives of the entrepreneurs to develop their riches (*Zahra, Filatotchev, & Wright, 2009*). Previous researches illustrate that entrepreneurship competency has a positive effect on business performance (*Ahmad, Suseno, Seet, Susomrith, & Rashid, 2018; Barazandeh, Parvizian, Alizadeh, & Khosravi, 2015; Pamela, Pambudy, & Winandi, 2016*).

On the other hand, the advance of technology has changed the economic image and affected the dynamics of a business environment. Following globalization, Small-and-Medium Enterprises find the business environment becoming more competitive and difficult for them to keep and improve business performance (*Kraus, Rigtering, Hughes, & Hosman, 2012*). Some literature sources explain that a determinant factor to entrepreneurship success is technology. The entrepreneurs of Small-and-Medium Enterprises' should realize that the change of human habit or lifestyle can affect the business strategy that they apply. In the digital era, interaction with internet technology has become a lifestyle and even a habit of daily human activity.

The survey conducted by *Asosiasi Penyelenggara Jasa Internet Indonesia* (APJII) or Association of the Indonesian Internet Service Provider indicates that the use of the internet among Indonesians has been significantly increasing in a few years. The Internet user value was only about 7.8% of Indonesians in 2005, and this number increased to 34.9% in 2014 and became 51.8% in 2016(*APJII, 2016*). Based on the performance report retrieved from the Ministry of Communication and Informatics, the cellular gadgets entering Indonesia had reached about 126% in 2016 (Kemkominfo, 2016). Data collected by the Ministry show that internet technology and cellular gadgets are growing fast and changing the way of how entrepreneurs usually run the business. Internet technology allows businesses to automate their manual operations and process of the information faster (*APJII, 2016*).

Internet technology has fundamentally changed the business paradigm and becomes more integrated into the marketing function of a business (*Prasad, Ramamurthy, & Naidu, 2001*). Internet marketing then emerges as one of the thrusting forces that stimulate enterprises to build a good relationship with customers (*Strauss, El-Ansary, & Frost, 2003*). Entrepreneurs, therefore, are expected to integrate their competency by internet technology whilst managing business. *Rosalind Jones, Alford, and Wolfenden* (*2015*) have found that Small-and-Medium Enterprises (SMEs) of tourism in Britain are enthusiastic to adopt internet technology and willing to learn benefits from digital marketing. The Internet has provided them the opportunity of innovation to the scale that they could not have imagined before. For example, digital marketing provides ultimate information access that helps SMEs to define market targets faster. Other researches declare that the internet has proved to be effective as a marketing tool of SMEs (*Chaston & Mangles, 2003; Datta & R, 2005; Mujiyana, Sularto, & Mukhyi, 2012; Reimers, Chao, & Gorman, 2016*). It indeed provides the opportunity for SMEs and entrepreneurs to promote their products and develop their business via the internet.

The objective of this research is to examine the relationship between the competency of entrepreneurs and internet technology-based business applications when entrepreneurs attempt to develop business performance. The research was conducted at Small-and-Medium Enterprises (SMEs) in the city of Tarakan, Indonesia. This research's results show that entrepreneurship competency positively affects internet technology-based business applications. Indeed, internet technology-based business application seems to mediate the effect of entrepreneurship competency on business performance. This paper is divided into seven sections. The second section explains the literature review and hypothesis development. The third section is on methodology. The fourth section concerns the result, while the fifth provides discussion. The sixth and seventh sections are conclusions and limitations.

2. Literature Review and Hypothesis Development

2.1. The Effect of Entrepreneurship Competency on Internet Technology-Based Business Application

The extent of internet technology adoption by entrepreneurs in their business activity is affected by several factors, such as entrepreneurship competency, customer habit, supplier or intermediary, competition level, and product characteristics (*Howcroft & Durkin, 2000*). Technology is a method to process things to obtain cost and time efficiencies, which later results in more qualified products. The bases of technology creation include market demand, problems solution, science application, improvement of effectiveness and efficiency, and modernization (*Marti'ah, 2017*). Internet technology-based business application is a process of establishing business innovation when entrepreneurs adapt and involve internet technology as their expectancy base to create a proper innovative strategy to improve business performance. Some empirical studies support the effect of entrepreneurship competency on internet technology-based business applications.

McGowan and Durkin (*2010*) explored whether entrepreneurship competency in small enterprises adopted and utilized internet potentials in developing and supporting a good relationship among customers. This relationship is the key factor and one of the main focuses in marketing literature, especially when discussing the relationship between supplier and customer or buyer. A qualitative methodology was applied to examine the features and characteristics of challenges dealt with by 30 individuals using the internet. The results of this examination indicate that entrepreneurship competency stimulates entrepreneurs adopting the internet to develop their business. The ultimate output of this research is a more comprehensive insight of competency, which is called as entrepreneurial small firm (ESF) that represents an internet marketing spectrum.

Ezenwafor, Onokpaunu, and Nna-Emmanuel (*2017*) observed a population of 200 entrepreneurs in Delta North Senatorial District of Delta State. Their study revealed that Delta State entrepreneurs assume themselves as incompetent to use online social media as a marketing tool. They benefit from online social media as the marketing method, by greater success in their business, improving customer awareness to their products, and increasing customer loyalty, which further produces a higher sale cycle. This research recommends successful digital entrepreneurs to advise the novices and potential entrepreneurs to keep them informed about competencies they need to have for successful marketing via online social media.

Marti'ah (*2017*) carried out a descriptive review of the business process (entrepreneurs) using the technology base and elaborated the review under the education perspective. This review described middle and small enterprises that apply technology through motivation, ownership, management, employment, etc. Technopreneurship can be introduced through the education world as a transformation tool, or precisely as a science to developing entrepreneurship using technology base.

According to the empirical researches above and some elaborations, the following hypothesis is then proposed:

H1: *Dynamic entrepreneurship competency has a positive effect on entrepreneurs to adopt internet technology-based business applications.*

2.2. The Effect of Internet Technology-Based Business Application on Business Performance

The application of internet technology (including website, email, blog and online social media) into a business allows small entrepreneurs to change the way they communicate with the customers, how they market their products and services, and how they interact with customers to develop a better relationship. The change facilitated by internet media might deliver benefits to entrepreneurs, either through sale, intention, customers' attention, innovation, etc.

Some empirical reviews have found a positive effect of internet technology-based business applications on business performance. Wade, Johnston, and McClean (2004) conducted a study to explore the effect of the post-adoption of Internet Business Solution (IBS) on business value creation. Business value is measured by income, direct and indirect costs, and investment satisfaction. The sample included 254 Small-and-Medium Enterprises in Canada and the United States. The results of this research show that business value can be significantly improved by applying Internet Business Solution (IBS). Moreover, *McGowan and Durkin (2010)* perceived that the main reason of why Small-and-Medium Enterprises' entrepreneurs adopt internet technology-based business application is to collect information faster and to improve their business performance.

Doherty, Ramsey, Harrigan, and Ibbotson (2016) employed a qualitative method to explain the main issues related to Small-and-Medium Enterprises (SMEs) in Ireland. Their study explored how SMEs' acceptance of internet technology is and its impact on them. The study also conducted further investigation on how new internet technology is adopted. The adoption of broadband internet technology by SMEs has successfully increased efficiency and helped them develop a strategy daily. The manager/owner of SMEs is a decision-maker, and mostly they indicate that the broadband internet technology (including website, email, blog, and online social media) can improve the business image for the better. The effect of online trading through e-commerce can reveal a new international market for SMEs. Some SMEs have gradually applied this technology, but in other SMEs, technology is successfully increasing efficiency and productivity by giving an efficient or real-time way of communication.

By taking into account the studies above, two hypotheses are then generated, which can be presented as follows:

H2: *Internet technology-based business application increases business performance.*
H3: *Internet technology-based business application is the effect mediator of entrepreneurship competency on business performance.*

All the hypotheses proposed are further arranged to constitute an empirical research model to answer the research problem. This Empirical Research Model is depicted in *Fig. 1.*

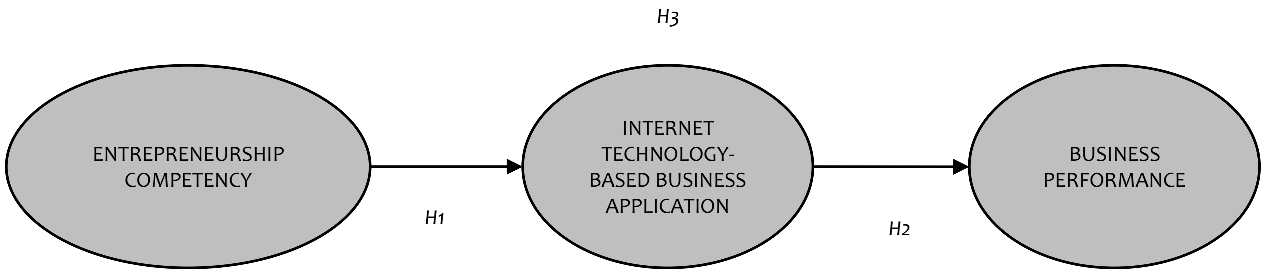

Fig 1. Empirical Research Model*

*Source: compiled by Authors.

3. Methods and Data

3.1. Research Variable

There are three (3) latent variables observed and measured in this research. These are entrepreneurship competency as an independent/exogenous variable, internet technology-based business application as mediation variable, and business performance as a latent/unobserved (unmeasured) variable. All these variables are proxied by respondents' perceptions on indicators of each variable. Both variables and their indicators are elaborated in the following *Table 1.*

3.2. Population and Sample

The research population is all from small-and-medium Enterprises (SMEs) in the city of Tarakan. Some reasons why the city of Tarakan became this research's area are: a) the city of Tarakan location bordering Malaysia and Brunei Darussalam, it is the potential for trade among countries as indicated in the city of Tarakan, many goods originating from Malaysia are imported, and conversely, there are many goods from Tarakan in Malaysia, b) the city of Tarakan is a stopover city and serves as an entry point for people from all regions of North Borneo (Bulungan regency, Nunukan Regency, Tana Tidung Regency, and Malinau regency), and c) the city of Tarakan is known as a service business city, which encourages the growth of SMEs more than other cities and districts in Northern Borneo.

The determined sample is based on area, and hence, the sampling technique is called an area probability sampling. The observed area include several districts, namely Central Tarakan, West Tarakan, East Tarakan, and North Tarakan. The research sample is SMEs' entrepreneurs based on the definition given by No.20/2008 Law and BPS. One hundred (100) respondents become the sample and each has a different business, such as trade, service, or home industry. The data collection technique involves primary data extraction. Field study is carried out at a research location with questionnaires distribution. Respondents (SMEs' entrepreneurs) were required to answer the questionnaire, and their answers provided data for analyzes. The obtained data are categorized into several time dimensions, making the data cross-sectional.

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Table 1

Variables and Indicators*

Latent Variable	Indicator of Variable	Reference Source
Entrepreneurship Competency (Exogenous Latent)	1. Risk Control 2. Autonomy 3. Searching and Analyzing Information 4. Communication 5. Dynamic 6. Building the Social Network 7. Change Management 8. Initiative 9. Innovation 10. Integrity 11. Leadership 12. Result Orientation 13. Negotiation 14. Problem Solving Skill 15. Responsibility	(*Roblesa & Rodrigueza, 2015*)
Internet Technology-Based Business Application (Intervening Latent)	1. Online Communication Channel 2. Online Promotion Channel 3. Online Supply Distribution Channel 4. Online Sale Channel 5. Online Transaction Channel	(*Peterson, Balasubramanian, & Bronnenberg, 1997*)
Business Performance (Endogenous Latent)	1. Profit Growth 2. Sale Growth 3. Capital Growth 4. Efficiency 5. Customer Growth	(*Meutiaa & Ismail, 2012; Sidik, 2012*)

*Source: Results of theoretical studies and empirical reviews on hypotheses.

3.3. Data Analysis Technique

The combination of Partial Least Squares (PLS) and Structural Equation Modelling (SEM) (PLS-SEM) was used to analyze research data, and this technique was processed by the WarpPLS version 6.0 computer program. The analysis involves several tests, such as measurement test (validity and reliability), Goodness-of-Fit test, mediation test, and hypothesis test. Research hypotheses are tested using the following equation:

$$\mathrm{IBb} = \alpha_1 + \beta_1\,\mathrm{Ec} + \varepsilon_1, \quad (1)$$

$$\mathrm{Bp} = \alpha_2 + \beta_{21}\,\mathrm{IBb} + \varepsilon_2, \quad (2)$$

wherein IBb – Internet Technology-Based Business Application;
Ec – Entrepreneurship Competency;
BP – Business Performance.

4. Results

4.1. Descriptive Statistic

Respondents' perception of variables observed is understood via interval criteria $\left[\frac{5-1}{3}\right] = 1{,}33$. *Sugiyono* (2012) states that the criteria of value interpretation can be arranged into a few categories:

1,00 – 2,33 = Low
2,34 – 3,66 = Medium
3,67 – 5,00 = High

Each variable to be described in the following sections.

4.1.1. Entrepreneurship Competency

Entrepreneurship competence is measured by fifteen (15) indicators. Under the survey result and descriptive analysis, the index of entrepreneurship competency is depicted in *Table 2.*

Table 2

Descriptive Statistic of Entrepreneurship Competency*

No	Indicator	Average Rate
1.	Risk Control	4,08
2.	Autonomy	3,82
3.	Searching and Analyzing Information	4,08
4.	Communication	4,29
5.	Dynamic	3,94
6.	Building the Social Network	4
7.	Change Management	3,85
8.	Initiative	3,95
9.	Innovation	3,8
10.	Integrity	4,37
11.	Leadership	4,29
12.	Result Orientation	4,09
13.	Negotiation	3,95
14.	Problem Solving Skill	4,02
15.	Responsibility	4,58
	Total Average Rate	4,074

*Source: Primary Data is Processed (2018).

Table 2 shows that the total average rate of respondents' answers to the variable of entrepreneurship competency is 4,074. The highest average rate is shown by an indicator of responsibility with 4,58, while the lowest is given by indicator of innovation with 3,8. Based on the value interpretation of all the indicators, it can be mentioned that the entrepreneurship competence of the respondents is residing in the high category.

4.1.2. Internet Technology-Based Business Application

Internet technology-based business application is measured by five (5) indicators. Based on the result of the survey and descriptive analysis *Table 3* was designed to indicate the index of internet technology-based business application.

Table 3

Descriptive statistic of internet technology-based business application*

No	Indicator	Average Rate
1.	Online Communication Channel	4,17
2.	Online Promotion Channel	4,05
3.	Online Supply Distribution Channel	3,74
4.	Online Sale Channel	3,58
5.	Online Transaction Channel	3,2
	Total Average Rate	3,75

*Source: Primary Data is Processed (2018).

Table 3 indicates that the total average rate of respondents' answers to the variable of internet technology-based business application is 3,75. The highest average rate is given by indicator of the online communication channel with 4,17, while the lowest is provided by the indicator of the online transaction channel with 3,2. According to the value interpretation of all indicators, it can be said that internet technology-based business application by the respondents is staying at high category.

4.1.3. Business Performance

Business performance is measured with five (5) indicators. In pursuance of the result of the survey and descriptive analysis, the index of business performance is presented in *Table 4*.

Table 4

Descriptive Statistic of Business Performance*

No	Indicator	Average Rate
1.	Profit Growth	3,87
2.	Sale Growth	3,9
3.	Capital Growth	3,72
4.	Efficiency	3,46
5.	Customer Growth	3,96
	Total Average Rate	3,78

*Source: Primary Data is Processed (2018).

Table 4 shows that the total average rate of respondents' answers to the variable of business performance is 3,78. The highest average rate is indicated by the indicator of customer growth with 3,96, while the lowest is shown by the indicator of efficiency with 3,46. Given the value interpretation of all indicators, business performance seems to be in the high category.

4.2. Evaluation of Research Model

The evaluation of the research model involves two stages, which start from the evaluation of the measurement model and continues with the evaluation of the structural model. The evaluation process is made by PLS-SEM and WarpPls version 6.0. The algorithm method used in this research to examine the outer model had been available in PLS Model A, and this mode was used because all constructs in this research use reflexive indicators. The inner model has been examined by Mode Linear because the relationship of all constructs in the model is assumed to be linear. The bootstrapping method was used for re-sampling, and it might be the best option for sample size that is equaled to or more than 100 (*Sholihin & Ratmono, 2013*).

4.2.1. Evaluation of Measurement Model

Evaluation of measurement model aims to assess the reliability and validity values of the indicators that constitute latent variables. Based on model conceptualization, all variables in this research are measured with reflexive indicators. Latan and Ghozali (2016) state that the measurement of reliability and validity (outer model) with reflexive indicators must involve the following conditions:

1. Indicator reliability is obtained only if its factor loading value is > 0,7.
2. Internal consistency's reliability is attained only when composite reliability is > 0,7.
3. Convergent validity is acquired only if the Average Variance Extracted (AVE) is > 0,5.
4. Discriminant validity has prevailed only if Square-Root AVE is > correlation across the constructs.

Result of analysis on indicator reliability of all indicators that explain the research variable is displayed in *Table 5*.

According to *Table 5*, there are indicators with factor loading values less than 0,7. All of them are indicators in the variable of entrepreneurship competency:

– Autonomy (Ec2) with a factor loading value of 0,579;
– Dynamic (Ec5) with a factor loading value of 0,662;
– Change Management (Ec7) with a factor loading value of 0,513;
– Initiative (Ec8) with a factor loading value of 0,496;
– Innovation (Ec9) with a factor loading value of 0,571;
– Integrity (Ec10) with a factor loading value of 0,557;
– Result Orientation (Ec12) with a factor loading value of 0,568;
– Negotiation (Ec13) with a factor loading value of 0,672;
– Problem-solving skill (Ec14) with factor loading value of 0.657.

Table 5

Factor Loading Values of Indicators of Research Variable*

Variable		Indicator	Factor Loading
Entrepreneurship Competency (Ec)	Ec1	Risk Control	0,765
	Ec2	Autonomy	0,579
	Ec3	Searching and Analyzing Information	0,762
	Ec4	Communication	0,734
	Ec5	Dynamic	0,662
	Ec6	Building the Social Network	0,744
	Ec7	Change Management	0,513
	Ec8	Initiative	0,496
	Ec9	Innovation	0,571
	Ec10	Integrity	0,557
	Ec11	Leadership	0,733
	Ec12	Result Orientation	0,568
	Ec13	Negotiation	0,672
	Ec14	Problem Solving Skill	0,657
	Ec15	Responsibility	0,754
Internet Technology-Based Business Application (IBb)	IBb1	Online Communication Channel	0,792
	IBb2	Online Promotion Channel	0,856
	IBb3	Online Supply Distribution Channel	0,742
	IBb4	Online Sale Channel	0,789
	IBb5	Online Transaction Channel	0,72
Business Performance (Bp)	Bp1	Profit Growth	0,916
	Bp2	Sale Growth	0,907
	Bp3	Capital Growth	0,858
	Bp4	Efficiency	0,723
	Bp5	Customer Growth	0,745

*Source: Primary Data is Processed (2018).

Rule of thumb for measuring reliability and validity of indicators is not included and even eliminated from the process. Therefore, the analysis of reliability and validity only involves three elements, namely factor loading value, composite reliability value, and AVE rate.

The result of each element is elaborated in *Table 6*.

All indicators in *Table 6* are considered as valid because the factor loading value of these indicators is more than 0.7. These indicators also have good indicator reliability. The rate of AVE for each indicator is quite good as the obtained rate is > 0,5, which thus fulfills the criterion of convergent validity. Composite Reliability of each indicator is also quite good as the attained value is > 0,7, which thus fulfills the criterion of internal consistency's reliability.

The comparison between Square-Root AVE and Cross-Construct Correlations is clarified in *Table 7*.

The rate of Square-Root AVE for each construct is higher than cross-construct correlations, and thus, each construct has good discriminant validity (*Table 7*).

Table 6

Factor Loading Value, Composite Reliability, and Average Variance Extracted*

Variable	Indicator	Factor Loading	Composite Reliability	AVE
Entrepreneurship Competency	Risk Control (Ec1)	0.765	0.92	0.606
	Searching and Analyzing Information (Ec3)	0.762		
	Communication (Ec4)	0.734		
	Building the Social Network (Ec6)	0.744		
	Leadership (Ec11)	0.733		
	Responsibility (Ec15)	0.754		
Internet Technology-Based Business Application	Online Communication Channel (IBb1)	0.792	0.886	0.610
	Online Promotion Channel (IBb2)	0.856		
	Online Supply Distribution Channel (Ibb3)	0.742		
	Online Sale Channel (Ibb4)	0.789		
	Online Transaction Channel (Ibb5)	0.72		
Business Performance	Profit Growth (Bp1)	0.916	0.919	0.695
	Sale Growth (Bp2)	0.907		
	Capital Growth (Bp3)	0.858		
	Efficiency (Bp4)	0.723		
	Customer Growth (Bp5)	0.745		

*Source: Primary Data are Processed (2018).

Table 7

Square-Root AVE and Cross-Construct Correlations*

Construct	Square-Root AVE	Correlations		
		EC	IBB	BP
Entrepreneurship Competency	0.778	1	0.552	0.592
Internet Technology-Based Business Application	0.781	0.552	1	0.644
Business Performance	0.834	0.592	0.644	1

*Source: Primary Data is Processed (2018).

4.2.2. Evaluation of Structural Model

Evaluation of the structural model (inner model) aims to predict relationships across variables by examining how much variance can be explained to acknowledge the P-value significance (*Latan & Ghozali, 2016*). Also, the structural model evaluation is besides useful to explain the need for the test on four hypotheses of this research.

Before the evaluation relationship across variables, the goodness-of-fit must be evaluated first, as indicated by the following *Table 8*.

Research model has good fit, and it is proved by P-value of < 0.05 for APC, ARS and AAR, when the value of each is explained as follows: APC = 0,598, ARS = 0,360 and AARS = 0,354. Both AFVIF rates are < 3,3, meaning that there is no multicollinearity problem across indicators and exogenous variables. The goodness-of-fit rate is 0,479> 0,36, which means that the model's fit is quite good. The rates for SPR, RSCR, SSR, and NLBCDR are mostly equaled to 1, meaning that there is no causality problem in the model (*Latan & Ghozali, 2016*).

The estimated relationship across variables and its variance rates are shown in *Table 9*.

Fig. 2 illustrates the estimated relationship across variables and their variance rates.

Table8

Goodness-of-Fit of Structural Model*

Criteria	Parameter	Rule of Thumb
Average path coefficient (APC)	0,598/ P<0,001	Acceptable P < 0,05
Average R-squared (ARS)	0,360/ P<0,001	Acceptable P < 0,05
Average adjusted R-squared (AARS)	0,354/ P<0,001	Acceptable P < 0,05
Average full collinearity VIF (AFVIF)	1,834	acceptable if <= 5, ideally <= 3,3
Tenenhaus GoF (GoF)	0,479	small >= 0,1, medium >= 0,25, large >= 0,36
Sympson's paradox ratio (SPR)	1,000	acceptable if >= 0,7, ideally = 1
R-squared contribution ratio (RSCR)	1	acceptable if >= 0,9, ideally = 1
Statistical suppression ratio (SSR)	1	acceptable if >= 0,7
Nonlinear bivariate causality direction ratio (NLBCDR)	1	acceptable if >= 0,7

*Source: Primary Data are Processed (2018).

Table 9

Result of Estimation on Relationship Across Variables*

Description Path	Path Coefficient	P-value	R^2	Q^2
Entrepreneurship Competency (Ec)→Internet Technology-Based Business Application (IBb)	0,552	<0,001	0,298	0,309
Internet Technology-Based Business Application(Ibb)→Business Performance (Bp)	0,644	<0,001	0,409	0,417

*Source: Primary Data is Processed (2018).

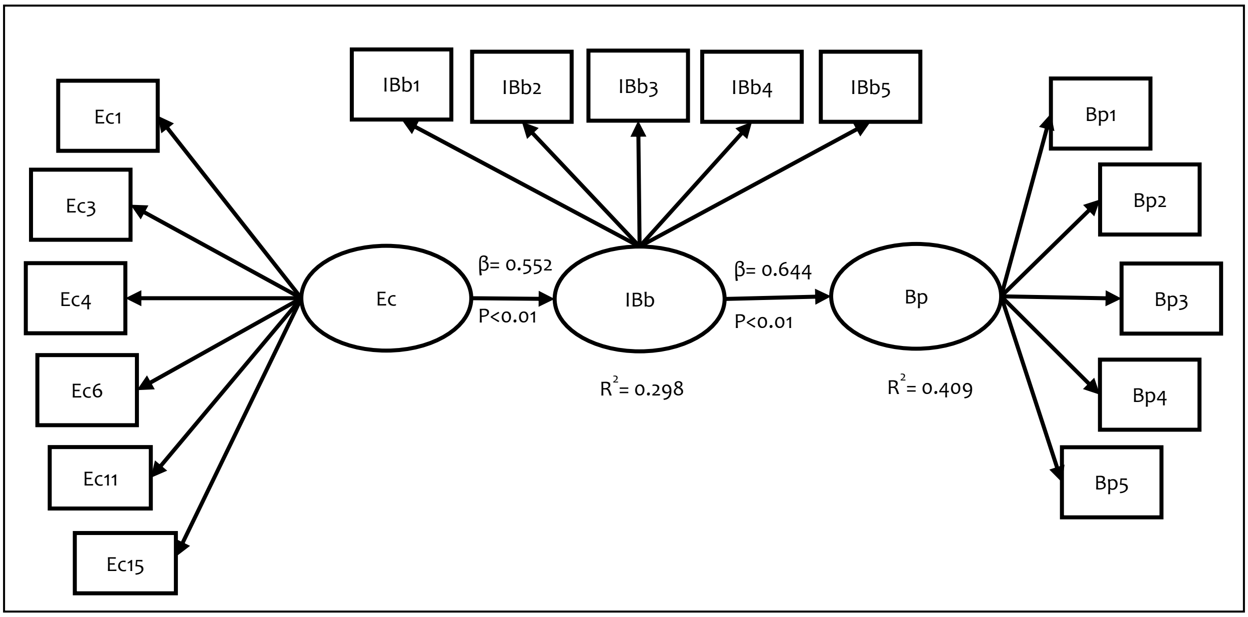

Fig. 2. Significance of The Effect Relationship Across Variables in Path Diagram

*Source: compiled by Authors.

Based on *Table 9*, the R-squared (R^2) rate of the variance that affects Internet Technology-Based Business Application is 0,298. This rate can be described as that the variance of Entrepreneurship Competency has affected the variance of Internet Technology-Based Business Application at the range of 29,8%, while the remaining 70,2% is affected by other variables out of the research model. The variance that affects Business Performance has an R-squared rate of 0,409. This rate is elaborated as that the variances of Entrepreneurship Competency and Internet Technology-Based Business Application affects the variance of Business Performance at the range of 40,9%, while the other 59,1% is affected by other variables beyond the research model. R-squared (R2) rate of the variance that affects Internet Technology-Based Business Application is in moderate category (R2> 0,25), while the variable-rate that affects Business Performance is in moderate category (R2> 0,25) (*Latan & Ghozali, 2016*).

The Q-Squaredrates for Internet Technology-Based Business Application and Business Performance are 0,309and 0,417 (>0), and thus, the research model has predictive relevance(*Latan, & Ghozali, 2016*).

4.2.3. Mediation Test

The mediation test in this research uses Variance Accounted For (VAF) Test. This method is suggested by *Hair, Hult, Ringle, and Sarstdett* (*2013*) by motivation that it is more suitable or appropriate than others in testing mediation effect in PLS-SEM because PLS-SEM requires re-sampling method and there is no need for assumptions of variable distribution. Therefore, PLS-SEM can be applied in a small sample. *Hair et al.* (*2013*) state that mediation test procedure with VAF method involves the following steps:

1. The effect of the independent variable on the dependent variable is directly tested without involving the mediation variable.
2. If the direct effect is significant, then the procedure continues with testing the indirect effect of the independent variable on the dependent variable with the mediation variable.
3. If the indirect effect is significant, then it is followed by reckoning the VAF rate and determining whether the mediation effect has existed or not. This determination must regard some criteria of mediation as follows:

   a. if the VAF rate is > 80%, there is full mediation;
   b. if the condition is 20% < VAF < 80%, then it is partial mediation;
   c. if the VAF rate is < 20%, there is no mediation effect.

The rate of Variance Accounted For (VAF) is reckoned by dividing the indirect effect with the total effect (direct effect plus indirect effect). The result of the test for both direct and indirect effects of the independent variable (Entrepreneurship Competency) on the dependent variable (Business Performance) through the mediation variable (Internet Technology-Based Business Application) is presented in *Table 10*.

Table 10 shows that both coefficients of direct effect and indirect effect are significant (p<0,01) and their VAF rates are over 20%. Therefore, it can be recognized that the mediation role of Internet Technology-Based Business Application is in the category of partial mediation in the relationship of Entrepreneurship Competency on Business Performance.

Table10

Testing on Mediation Role of Internet Technology-Based Business Application at the Effect of Entrepreneurship Competency on Business Performance using VAF Method*

Description	Coefficient	P-Value
Direct Effect	0,61	<0,01
Indirect Effect	0,356	<0,01
Total Effect	0,966	
VAF= Indirect Effect / Total Effect	0,368	

*Source: Primary data are processed (2018).

5. Discussion

Some reasons why the city of Tarakan was chosen as research area are: a) the location of Tarakan city bordering Malaysia and Brunei Darussalam; it is potential for trade among countries as indicated in the city of Tarakan, many goods originating from Malaysia are imported, and conversely, there are many goods from Tarakan in Malaysia, b) Tarakan city is a stopover city and serves as an entry point for people from all regions of North Borneo (*Bulungan regency, Nunukan Regency, Tana Tidung Regency, and Malinau regency*), and c) Tarakan city is known as a service business city, which encourages the growth of SMEs more than other cities and districts in Northern Borneo. Furthermore, an explanation and discussion of the results of hypothesis testing are in this study.

5.1. Entrepreneurship Competency and Internet Technology-Based Business Application

Table 9 and *Fig. 2* show that there is an indication that Entrepreneurship Competency has a positive and significant effect on Internet Technology-Based Business Application with a path coefficient value of 0,552 and a P-value of < 0,01. This finding supports *Hypothesis 1*, and thus, this hypothesis is accepted. This finding is by *Howcroft and Durkin* (*2000*) who noted that entrepreneurship competency and entrepreneurship characteristics are factors that stimulate entrepreneurs to adopt internet technology into their business. Other previous studies also agree with this finding, such as *McGowan and Durkin* (*2010*), *Ezenwafor et al.* (*2017*) and *Marti'ah* (*2017*)adopting the internet for their business development. This research has proven that a high level of entrepreneurship competency is more encouraging entrepreneurs to adopt internet technology into their business activity. Entrepreneurs who often search and analyze information should have internet technology to get better and faster access to information about opportunities for a more profitable new business. Indeed, internet technology is also needed by entrepreneurs to build communication with customers to strengthen customer loyalty. Entrepreneurs can enhance their social network, especially with customers, via internet social media. The result of descriptive statistics has indicated that the usage level of internet technology is the highest when entrepreneurs build communication with customers. The second highest is when entrepreneurs use internet technology as a tool to promote their product and service.

5.2. Internet Technology-Based Business Application and Business Performance

Table 9 and *Fig. 2* show that Internet Technology-Based Business Application has a positive and significant effect on Business Performance. Path coefficient value of this relationship is 0,644 with p-value < 0,01. This finding justifies *Hypothesis 2*, and thus, this hypothesis is accepted. It corresponds with previous findings by *Wade et al.* (*2004*), *McGowan and Durkin* (*2010*), and *Doherty et al.* (*2016*). In general, their findings indicate that the adoption of internet technology makes business activity more efficient and helps entrepreneurs create a better business strategy and improve business performance. This research has proven that higher usage level of internet technology leads to improvement in business performance. The adoption of internet technology as tools of promotion and communication with customers should help increase customers' loyalty. The empowerment of customer loyalty will provide entrepreneurs with more sales and greater profits, which further increases the possibility of return on investment. The Internet is useful for business activity because it allows an online business transaction, which improves business operations' efficiency.

5.3. Mediation Role of Internet Technology-Based Business Application at the Effect of Entrepreneurship Competency on Business Performance

The direct effect of Entrepreneurship Competency on Business Performance without the mediation of Internet Technology-Based Business Application has been described in *Table 10*. The effect is positive and significant with a path coefficient value of 0.61 and P-value < 0,01. Due to the finding of significant effect, the analysis continues to indirect effect testing. Result of the test shows that the indirect effect of Entrepreneurship Competency on Business Performance via Internet Technology-Based Business Application is positive and significant (P-value < 0,001) with a path coefficient value of 0,356. The next process was computing the VAF rate to determine whether there was a mediation effect or not. The reckoned VAF rate is above 20%, which is precisely 36,8%. Based on this result, the mediation role indeed exists. Internet Technology-Based Business Application plays the role of partial mediation at the effect of Entrepreneurship Competency on Business Performance. This finding corroborates Hypothesis 3, and thus, this hypothesis is accepted. This research has discovered that communication, promotion, sale, transaction, and supply distribution, which begin to get online, might work as a runway for entrepreneurship competency to improve sales, profit, customer loyalty, capitalization, and business efficiency. Partial mediation role of Internet Technology-Based Business Application can be realized as that entrepreneurship competency might help entrepreneurs achieve business success partially via internet technology. This finding should answer the research problem, respectively, whether entrepreneurship competency increases business performance via internet technology-based business application.

6. Conclusions

The objective of the research is to conduct a deep examination of the effective relationship of internet technology-based entrepreneurship competency on the performance of Small-and-Medium Enterprises in the city of Tarakan. This research proposes three hypotheses.

The result of the hypothesis test on Hypothesis 1 indicates that the dynamic entrepreneurship competency affects entrepreneurs to adopt internet technology-based business applications. In other words, a high level of entrepreneurship competency leads to a high level of internet technology-based business application. This finding is under previous studies conducted by *McGowan and Durkin* (*2010*), *Ezenwafor et al.* (*2017*) and *Marti'ah (2017)*.

The result of a hypothesis test on Hypothesis 2 has revealed that internet technology-based business applications can improve business performance. Therefore, a high level of internet technology-based business applications provides a higher level of business performance. This finding corresponds with previous studies carried out by *Wade et al.* (*2004*), *McGowan and Durkin (2010)*and *Doherty et al.* (*2016*).

The result of a hypothesis test on *Hypothesis 3* explains that internet technology-based business application plays a mediation role in the effect of entrepreneurship competency on business performance. In other words, a high level of entrepreneurship competency is followed by a high level of both internet technology-based business application and business performance. The current research verifies that business-related activities, such as communication, promotion, sale, transaction, and supply distribution when they get online, can facilitate entrepreneurship competency to improve sales, profit, customer loyalty, capitalization, and business efficiency. Partial mediation role of Internet Technology-Based Business Application can be realized as that entrepreneurship competency might help entrepreneurs achieve business success partially via internet technology. This finding should answer the research problem, respectively, whether entrepreneurship competency does improve business performance via internet technology-based business application.

All aforementioned results have the practical implication that can be suggested to entrepreneurs who want to have a successful business. The results of this research have indicated that internet technology plays an important role in improving business performance, and therefore, entrepreneurs must integrate their competency and internet technology to run their business into a success. Small-and-Medium Enterprises, especially entrepreneurs, might find business opportunities widely opened when they use the internet, including the opportunity to improve business performance.

7. Limitation

The research has limitations; it only uses limited SME research samples in the city of Tarakan; which is one of the small cities in Indonesia. Future research can expand the sample through other cities in Indonesia.

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TABLE OF CONTENTS

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