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*Published in:*  
Proceedings of ISPIM Innovation in a digital world

*Publication date:*  
2022

*Document Version*  
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*  
Záleha, B., & Gertsen, F. (2022). How entrepreneurial are entrepreneurial master's programs? In *Proceedings of ISPIM Innovation in a digital world* LUT Scientific and Expertise Publications.

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## Are higher education entrepreneurial programmes really entrepreneurial?

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**Abstract:** The literature shows that entrepreneurial education makes sense. It is evoking entrepreneurial intentions and activities in students. However, most of the literature focuses on entrepreneurial education in general, and there is not a clear evaluation of such education on the academic level. That is why this paper holds the focus on entrepreneurial master's degrees themselves, their structure, and effectiveness. Moreover, it analyses the employment, job satisfaction, and the connection between the education and professional life of entrepreneurial graduates. This quantitative study confirms that entrepreneurial graduates have a higher self-employment rate compared to others. In addition, they compete well with other graduates in employment while still pursuing their entrepreneurial intentions as intrapreneurs. The aim is to raise awareness about entrepreneurial education in Europe, to make it more competitive, especially now in these volatile times.

**Keywords:** Entrepreneurship; Entrepreneurial education; Master's degrees; Employment; Job satisfaction; Entrepreneurial teaching; Use of Academic entrepreneurship

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### 1 What is known about entrepreneurial masters' degrees?

Entrepreneurial education is very often opposed to the education of traditional programs and courses. While the traditional teaching methods are good for educating facts, theories, and knowledge, entrepreneurial education is rather process oriented with the focus on practice. As the purpose of an entrepreneurial education is also to awake entrepreneurial attitudes in students. (Shipra, 2014)

Some may think that entrepreneurial education will necessarily make every student an entrepreneur. However, this is not the only purpose of this kind of education, which can also be derived from a widely known definition of entrepreneurship as „an important and relevant field of study which involves the study of sources, processes, evaluation, and exploitation of opportunities. Entrepreneurship does not require, but can include the business creation“ (Shane & Venkataraman, 2000). In fact, many entrepreneurial graduates find their place in well established companies, while still pursuing their

entrepreneurial intentions. In this case, they become intrapreneurs (or „corporate entrepreneurs “), which is generally understood as entrepreneurs working within an existing organisation renewing the organisation or creating a new organisation. It is possible to do it almost from every position. Entrepreneurs and intrapreneurs have similar characteristics and jobs, however intrapreneurs may often face additional challenges with transforming a company’s culture (Mohedano-Suanes & Benítez, 2017).

Nowadays, many countries around the world have joined the trend of educating entrepreneurship on different levels as universities, high schools, primary schools, or as an additional subject. Some studies confirming the positive impact of this education can be found (Shipra, 2014). In general, entrepreneurial education does not have a common structure within the European countries. Few countries like France, Denmark, Austria and more, offer a separate budget for entrepreneurial education, other countries finance the entrepreneurial education from the general budget for education, and others do not have any entrepreneurial education financing. The diversity is also in the strategic approach, when some countries has provided a clear teaching structure, other give teachers the freedom to choose (European Commission, 2016). On the other hand, in the USA, there are well established structures and departments for entrepreneurial education, which is being offered by the large majority of American schools. Therefore, Europe can be considered as being behind the USA in educating entrepreneurship (Dimitrovski, et al., 2014). The European Commission realizes the need for entrepreneurship in schools, and actively encourages countries to teach more entrepreneurship.

Comparing to other fields of studies, entrepreneurship is relatively young. Especially, when it comes to academic entrepreneurship. The first entrepreneurial course on the academic level was established at the Harvard Business School in 1947 (Cooper, 2003), a source was found mentioning an entrepreneurial course at University of Michigan already in 1927, but the original source was not tracked back, therefore it cannot be confirmed. Nowadays, students can choose whether to have a single entrepreneurial degree, an entrepreneurial degree in combination with something, or have entrepreneurial education extra to another completed degree. The academic entrepreneurial education can cover the entire scope of a business administration. It is often compared to management education at universities. However, it brings the broader and more practical approach for business which is intended not only for future entrepreneurs, but also manager and executives (Kuratko, 2003). The European Commission warns as well that the entrepreneurial education should not be mixed with regular Business or Finance studies, because it should evoke innovation, creativity in their students. This is further supported with Mathew, who says that intrapreneurship is not only about some kind of innovation department, but it brings the culture of innovation to a company (Mathew, 2012).

The term “entrepreneurial intention” has been mentioned several times in the literature. Indeed, the entrepreneurial education evokes those intentions in the students (Shipra, 2014), however it does not necessarily mean that the intentions will be transformed into entrepreneurial activities in terms of self-employment or business creation, as there are other factors influencing this. Walter and Block have carried a study, where they found a correlation between entrepreneurial studies, financial capability, control of corruption, and public image of entrepreneurs in different countries. Their results show that entrepreneurial activities between graduates are more common for those, who are in the countries with higher corruption rates and lower financial capability. On the other hand, in the entrepreneurial-friendly countries graduates tend to

pursue their careers in the entrepreneurship-related job positions, taking their roles of corporate entrepreneurs, or intrapreneurs (Walter & Block, 2016).

## **2 Data collection and frames of the research**

In researching for entrepreneurial study programs, the following search-names were considered:

- (Digital) Entrepreneurship
- (Business) Strategic Entrepreneurship
- International Entrepreneurship (Management)
- Sustainable Entrepreneurship
- (Global) (Business) Development and Entrepreneurship
- Entrepreneurship and (Global) Innovation
- (Deep) Technology Entrepreneurship / Entrepreneurial Engineering

From the research, the following programs with Entrepreneurship/Entrepreneurial in their name were excluded:

- With less than 120 ECTS (or equivalent)
- Very specific entrepreneurial programs like Biomedical Entrepreneurship or Fashion Entrepreneurship
- Taught in other than English language
- Graduated after the year 2000

Moreover, graduates who continued for the Doctorate's diploma and those who finished more than one master's degree were also excluded. The reason for excluding those is that their further studies do not clarify their employability or entrepreneurial activities. However, it is essential to mention, that numerous students were found who did or were in the process of a Doctorate education.

The data collection for the main survey were collected through volunteer sampling, where participants volunteered to participate in the research. In total more than 900 entrepreneurial graduates were contacted. Until 26<sup>th</sup> of April 2021, 169 responses were collected and 134 were fulfilling the requirements mentioned above and were further analysed. Only 37% of respondents graduated before year 2017, and respondents were studying in 12 European countries and include over 38 nationalities. Unemployed respondents were not further analysed due to a very small sample.

### 3 Structure of an entrepreneurial study program

To get to know a study program, it is important to look at its core – the courses. Therefore, an analysis was carried out of the compulsory courses for entrepreneurial master's degrees in Europe. In addition to that, it is possible to compare the courses with skills/knowledge used by the graduates, and this way to see the effectiveness and the need of each course.

The data were collected by online search through the following platforms: mastersportal.com, whatuni.com, and google.com. They were collected gradually between February and April 2021. First, two platforms allowed to filter universities by name and location, google search helped to identify a few more that were not featured on the first two platforms. Only compulsory courses were included, and they were retracted from study programs curriculums either freely available on the internet or received after contacting the university.

**Table 1** Comparison of courses connected into categories with skills/knowledge used in the professional life of entrepreneurial graduates

<i>Courses</i>	<i>% of programs with this course</i>	<i>% of graduates mentioning the use of it in their professional life</i>
Entrepreneurship	84%	60,7%
Management	65%	59,3%
Marketing	63%	56,3%
Innovation	63%	57,8%
Business strategy	61%	64,4%
Leadership	50%	48,1%
Finance	47%	27,4%
Business modelling	47%	41,5%
Academic	47%	20%
Accounting	37%	25,4%
Creativity related	36%	26,7%
Business development	32%	57,8%
Project management	21%	50,4%
Corporate entrepreneurship	20%	37,8%
New venture creation	20%	32,6%
Design thinking	19%	41,5%
Sustainability	19%	27,4%
Product development	16%	29,6%
Communication	13%	45,2%
Business ethics	11%	23%
Statistics	11%	20%
Opportunity creation	11%	16,3%

Funding	4%	28,1%
Negotiations	4%	37,8%
Pricing	3%	34,1%
Decision making	3%	53,3%
Problem-solving	3%	62,2%
Measuring business performance	1%	25,9%

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Some courses had many variations and therefore were connected into one main category which is listed above in Table 1. The listing beneath outlines the exact names of programs falling into the same category. In some cases, courses were named as a category plus some adjectives added, for example, “Fundamental Entrepreneurship” falls into the category Entrepreneurship. The mentioned adjectives are also listed below.

- Entrepreneurship - Process, practice, fundamental, theory, applied, understanding, technology
- Management - Intercultural, global, brand
- Marketing - Strategic, entrepreneurial, high-tech, digital, social media
- Innovation - Brand, technological, management, social
- Finance - Entrepreneurial, business
- Business modelling - Innovation, generation, sustainable
- Academic - Research methods, Qualitative/Quantitative methods
- Business strategy - Entrepreneurial, global, planning, Strategic Management
- Accounting - Accounting systems, management, financial, international, entrepreneurial
- Creativity related - Boosting creativity, creative thinking, exploring creativity
- Corporate Entrepreneurship - Intrapreneurship, change management
- Communication - Business, stakeholder, entrepreneurial, presentation skills

The courses like Entrepreneurship, Business Strategy, Management, Marketing, Innovation, or Leadership did not bring any significant difference between the occurrence in the entrepreneurial master’s degrees and use in the practice. This indicates that they are very important and should be included in an entrepreneurial degree.

The least useful courses, but still very often present in curriculums were identified by graduates as Finance, Academic courses, Accounting, and Creativity related courses. These four courses/skills show a significant difference between how many times they occurred in curriculums and how they are used in the real-life of graduates. Of course, there is a lack of knowledge on how graduates realize their use of creativity, or academic skills, as they may perhaps benefits the student in other courses.

The last category is about the skills/knowledge that were used by graduates in a high degree but were not that much present in the curriculums of entrepreneurial master's degrees. These are identified as Problem-solving, Decision making, Communication, and Project management. The mentioned courses are rather skills-oriented, and this way there can be an explanation for why they do not occur as a course that much. Such courses could be obtained as a result of a teaching method. Many universities are recently adopting problem-based learning which in the combination with teamwork for enhancing communication, and project assignments for enhancing decision making and project management should cover all the mentioned skills (Duch, et al., 2001). This is also mentioned by Leckeus (2015), who says that entrepreneurial education should be process- and student- oriented, which includes problem orientation, multi-disciplinarity, and learning from mistakes.

#### 4 Results of graduates

This chapter aims to analyse how successful graduates of entrepreneurial master's degrees are in their professional lives. Success is a very multi-faceted term, and that's why it is also difficult to measure and must be compared with a reference. Therefore, the data in this chapter will be compared to the average of data from various sources. The analysis is made on three aspects of a postgraduate life: Employment, job satisfaction, and the job connection to education.

##### *Employment of graduates*

Almost every person faces the challenge of searching for his/her first job. Being fresh graduates brings worries to many about which job should they land. It is not always an easy decision and process. And entrepreneurial graduates might face even harder decisions when considering their entrepreneurial ideas carried from their studies. The response group (134 entrepreneurial graduates) consisted of 62% employed, 32% of self-employed, and 6% of unemployed. Comparing it to the European average, the overall number of self-employed is significantly higher, but according to Eurostat, only 13% of university graduated people are self-employed (European Commission, 2021). In addition to that, 63,5% of the respondents stated that they have tried self-employment.

**Table 2** The employment and self-employment by the time since the graduation

<i>Fas</i>	<i>Employed</i>	<i>Self-employed</i>
Straight after the education or before finishing	38%	52%
0-3 months	37%	5%
4-6 months	17%	15%
7-9 months	4%	3%
10-12 months	1%	3%
13-24 months	2%	5%
More than 2 years	1%	17%

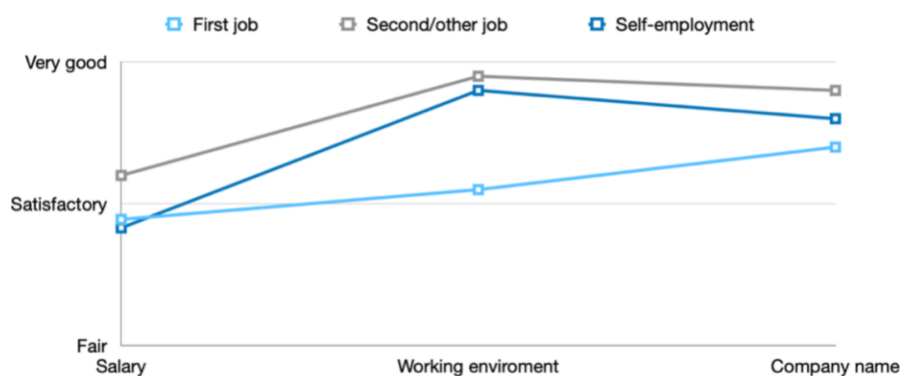
Education is one of the most important factors influencing the selection of the first job (Verhofstadt & Omey, 2003) and the selection can to a high degree form the future professional path. The weighted average when entrepreneurial graduates find their first job is 0-3 months, which is much earlier than the average of 5,1 months among all European university's graduates (European Commission, 2009). Thus, 97% of employed respondents have a full-time job and 90% of them have a fixed job, showing the high job stability among them.

As it is stated before, there are 32% of currently self-employed people in the sample. Of those, a majority of 77% can sustain themselves with self-employment, and the rest supports it with a paid job (21%), and with social benefits (7%). Among the self-employed 36% are alone and the rest, 64%, employ other people and in this way contributes to job creation. Mostly, they are running small companies, as 14% have only one extra employee, 24% have 2 or 3 other employees, another 19% employ 4-10 people, and 7% of self-employed graduates employ more than 10 people. In conclusion, there are over 134 job positions created by 31 self-employed graduates who can support themselves.

Respondents who were self-employed in the past, stated the following reasons for not continuing: Lost motivation to continue (26%), could not get the sufficient customer base (24%), could not get the sufficient funding (24%), realized that their idea was not good enough (19%).

### *Job satisfaction*

In order to make an analysis of how satisfied entrepreneurial graduates are compared to others, a control group of other graduates would have been needed, but this is outside the scope of this research. However, it is still possible to compare different occupations of entrepreneurial graduates and see the general results. Respondents in this question could choose between poor, fair, satisfactory, very good, and excellent level of satisfaction for three different factors: salary, working environment, and the company name.



**Figure 1** Comparison of the job satisfaction in different job occupations

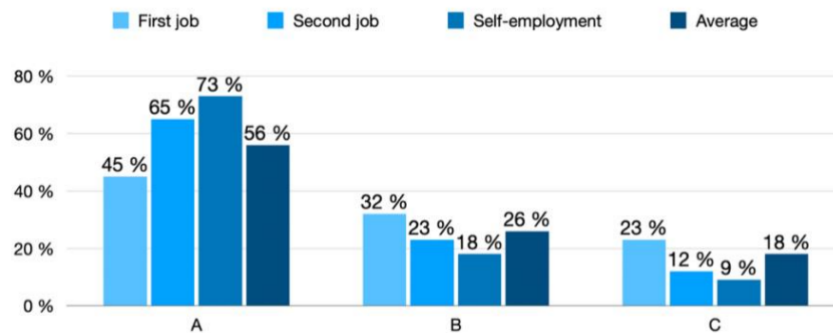
The highest satisfaction in all three aspects was measured for those who were employed in other than the first job (after the graduation). Self-employed are more satisfied with the working environment and the company name than those in the first job,



but salary-wise those in their first job were slightly more satisfied. Numerically, taking all factors and occupations together, entrepreneurial graduates job satisfaction value is 3,4, on the scale 1 to 5.

### *Professional connection*

Similarly, as in the case of job satisfaction, it is not possible to compare the professional connection unless carrying out the same survey between other than entrepreneurial graduates. Therefore, in this case, only different occupations of entrepreneurial graduates are compared. Respondents could choose from the following options: A – My job is in the field of my latest education, B – My job is outside the field of my latest education, but requires academic knowledge, C – There is no connection between my job, and my education.



**Figure 2** Comparison of the connection with education for different job occupations

From the results, it can be seen that the majority (56%) feels like they are using the knowledge from entrepreneurial masters degrees in their professional life. Another 26% of entrepreneurial graduates still use the academic knowledge, but do not use the entrepreneurial part. Lastly, only 18% of respondents do feel like, their degree does not help them in their jobs. Going deeper, the data also shows that most of the self-employed respondents found entrepreneurial education helpful and they use that skills/knowledge in their professional life. A significant difference was measured between first, and other than first job. The reason for this can be, that fresh graduates are more willing to take a job even though it is not in their field, to get more job-experiences and a salary.

## **5 Conclusion**

Based on the literature review it can be concluded that entrepreneurship is a relevant and important field of study, which is nowadays present in various forms at different educational levels, from elementary schools to universities, in forms of voluntary classes, through compulsory classes, to whole educations or degrees in entrepreneurship. Various studies confirm the positive effect on entrepreneurial intentions or activities of students passing those programs. The need for entrepreneurial education is being highlighted by European Commission as well, as Europe is considered being behind other regions regarding entrepreneurial practices. This paper holds the focus mostly on entrepreneurial university degrees, more specifically on the master's degrees in Europe. It builds mostly

on the knowledge presented in the literature review chapter, and by the side of it brings an independent survey for the evaluation of graduate's success in the professional life, and an overview of the courses.

The first analysis consisted of comparing the core courses found between various entrepreneurial degrees with the skills/knowledge used by their graduates in their professional life. Most of the frequently used skills/knowledge was reflected in the study curriculums. The most important courses were identified as: Business strategy, entrepreneurship, management, innovation, business development, marketing, project management and leadership. Problem-solving and decision making were subjects of great importance for graduates. However, these two were not formally present in the study curriculums. This might be because it is included/hidden in the form of teaching, as it is for example at Aalborg University, that applied problem-based-learning since 1974.

The previously mentioned findings from the literature were in most of the cases confirmed by the analysis of data from the survey. Thus, 32% of the entrepreneurial graduates who participated in the survey mentioned that they are currently self-employed. In total there were 63,5% of respondents who tried self-employment. This number is high above the average of all university graduates and of the general population. Other information coming from the survey were more difficult to compare without a control group reference. However, the data showed very high results in almost every aspect. For example, the acquisition of the first job happened in 92% of cases earlier than six months after the graduation. The job satisfaction was the highest in case of other than the first job, but it was comparable to those who were self-employed. Mostly self-employed think, that their job is in the field of their education. It is not very surprising in the entrepreneurial degree, but this might show a need to better communicate the aspects of corporate entrepreneurship.

Overall, this paper confirms most of the findings from the literature research presented and adds that graduates of entrepreneurial masters' degrees tend to have comparable results in employment as compared to other graduates. Moreover, their self-employment rate is significantly higher, which contributes to the job creation and is beneficial to the society.

## References

- Cooper, A. (2005). Entrepreneurship: The Past, the Present, the Future. In Z. J. Acs, & D. B. Audretsch, *Handbook of Entrepreneurship Research* (pp. 21 - 34). Boston/Dordrecht/London: Kluwer Academic Publishers.
- Dimitrovski, R., Doneva, E., Pushova, L., & Mirchevska, E. (2014). Entrepreneurship education for an economic development. In *Economic development and entrepreneurship in transition economies: Challenges in the Business Environment, Barriers and Challenges for Economic and Business Development* (pp. 528-535). Banja Luka: Faculty of Economics, University of Banja Luka.
- Duch, B. J., Groh, S. E. & Allen, D. E. (2001). *The Power of Problem-Based Learning*. 1st Edition ed. Delaware: Stylus Publishing.
- European Commission. (2016). Eurydice Report. Retrieved from Entrepreneurship Education at Schools in Europe: <https://op.europa.eu/en/publication-detail/-/publication/74a7d356-dc53-11e5-8fea-01aa75ed71a1/language-en>

- European Commission. (2009). Average length of the transition from school to the first significant job, 2009.png. Online: Available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Table\\_1-Average\\_length\\_of\\_the\\_transition\\_from\\_school\\_to\\_the\\_first\\_significant\\_job,\\_2009.png](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Table_1-Average_length_of_the_transition_from_school_to_the_first_significant_job,_2009.png) [Accessed 05 April 2022].
- European Commission. (2009, November). ENTREPRENEURSHIP IN VOCATIONAL EDUCATION AND TRAINING FINAL REPORT OF THE EXPERT GROUP. Retrieved from Promotion of SME competitiveness: [http://ec.europa.eu/enterprise/policies/sme/files/smes/vocational/entr\\_voca\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/files/smes/vocational/entr_voca_en.pdf)
- European Commission. (2021). Majority of the self-employed in the EU are men. [Online] Available at: [https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211123-2#:~:text=In%20addition%2C%20self%20employment%20appears,a%20high%20level%20of%20education\).](https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211123-2#:~:text=In%20addition%2C%20self%20employment%20appears,a%20high%20level%20of%20education).) [Accessed 5 April 2022].
- Kuratko, D. F. (2003). *ENTREPRENEURSHIP EDUCATION: EMERGING TRENDS AND CHALLENGES FOR THE 21ST CENTURY*. In U.S. Association of Small Business & Entrepreneurs, 2003 Coleman Foundation White Paper Series. Muncie.
- Leckeus, M. (2015). Entrepreneurship in education: What, Why, When, How. Retrieved from oecd.org: [https://www.oecd.org/cfe/leed/BGP\\_Entrepreneurship-in-Education.pdf](https://www.oecd.org/cfe/leed/BGP_Entrepreneurship-in-Education.pdf)
- Mathews, B. (2012, April). Think like a Startup - A white paper to inspire library entrepreneurialism. Retrieved from vtechworks.lib.vt.edu: <https://vtechworks.lib.vt.edu/bitstream/handle/10919/18649/Think%20like%20a%20STARTUP.pdf?sequence=1&isAllowed=y>
- Mohedano-Suanes, A., Benítez, D.G. (2018). Intrapreneurs: Characteristics and Behavior. In: Tur Porcar, A., Ribeiro Soriano, D. (eds) Inside the Mind of the Entrepreneur. Contributions to Management Science. Springer, Cham. [https://doi.org/10.1007/978-3-319-62455-6\\_8](https://doi.org/10.1007/978-3-319-62455-6_8)
- Shipra, V. (2014). Developing Entrepreneurial Life Skills: Creating and Strengthening Entrepreneurial Culture in Indian Schools. s.l.: Springer Science & Business Media, 2014.
- Vaidya, S. (2014). Developing Entrepreneurial Life Skills Creating and Strengthening Entrepreneurial Culture in Indian Schools. London: SpringerBriefs.
- Shane, S., & Venkataraman, S. (2000). The promise of Entrepreneurship as a field of research. Retrieved from Academy of Management Review: <https://entrepreneurscommunicate.pbworks.com/f/Shane%20-%20B%20Venkat%20-%20Ent%20as%20field.pdf>
- Verhofstadt, E., & Omey, E. (2003, April). The impact of education on job satisfaction in the first job. Retrieved from researchgate.net: [https://www.researchgate.net/publication/24125675\\_The\\_impact\\_of\\_education\\_on\\_job\\_satisfaction\\_in\\_the\\_first\\_job?enrichId=rgreq-7e7c4f02c1b1d3d1ceaf77ad49e4355b-XXX&enrichSource=Y292ZXJQYWdlOzI0MTI1Njc1O0F0jEwNDM0MTU5OTk0ODgwN0AxNDExODg4Mzg0NDQ4&el=1\\_x\\_2&](https://www.researchgate.net/publication/24125675_The_impact_of_education_on_job_satisfaction_in_the_first_job?enrichId=rgreq-7e7c4f02c1b1d3d1ceaf77ad49e4355b-XXX&enrichSource=Y292ZXJQYWdlOzI0MTI1Njc1O0F0jEwNDM0MTU5OTk0ODgwN0AxNDExODg4Mzg0NDQ4&el=1_x_2&)