

**Article** 

Not peer-reviewed version

# Digital Approach to Successful Business Plans in Forestry and Related Fields

<u>Eva Abramuszkinová Pavlíková</u>\*, <u>Jitka Meňházová</u>, <u>Kristaps Lešinskis</u>

Posted Date: 18 January 2023

doi: 10.20944/preprints202301.0331.v1

Keywords: business plan; artificial intelligence; forester management; young entrepreneurs



Preprints.org is a free multidiscipline platform providing preprint service that is dedicated to making early versions of research outputs permanently available and citable. Preprints posted at Preprints.org appear in Web of Science, Crossref, Google Scholar, Scilit, Europe PMC.

Copyright: This is an open access article distributed under the Creative Commons Attribution License which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Disclaimer/Publisher's Note: The statements, opinions, and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions, or products referred to in the content.

Article

## Digital Approach to Successful Business Plans in Forestry and Related Fields

Eva Abramuszkinová Pavlíková 1,\*, Jitka Meňházová 2 and Kristaps Lešinskis 3

- <sup>1</sup> Faculty of Business and Wood Technology, Mendel University in Brno, Czech Republic
- Faculty of Business and Wood Technology, Mendel University in Brno, Czech Republic; jitka.menhazova@mendelu.cz
- <sup>3</sup> BA School of Business and Finance, Riga, Latvia; kristaps.lesinskis@ba.lv
- \* Correspondence: eva.pavlikova@mendelu.cz

Abstract: This paper is introducing KABADA (Knowledge Alliance of Business Idea Assessment: Digital Approach) unique tool, together with opinions of young people about entrepreneurship, their skills and experience with this tool. The focus is on non-business students who study natural sciences, engineering and other areas at the Faculty of Forestry and Wood Technology at Mendel University in Brno, Czech Republic. KABADA tool has been developed and tested by a team of international experts. It can be used to improve forester management. This structured, Web-based, platform which is based on theoretical research, relevant statistics, and artificial intelligence insights, guides entrepreneurs through every step of the way including what challenges and opportunities lie ahead. The research included survey answers from 60 university students before and after using KABADA tool. The results show that students are interested in entrepreneurship but do not have the knowledge, experience and support from curriculum. Majority of students had no or very low experience with entrepreneurship nor any entrepreneurship training or study course before. After using the tool, students declared to have higher knowledge of entrepreneurship and the number of students who intended to become an entrepreneur increased. The tool is available on-line, free of charge.

Keywords: business plan; artificial intelligence; forester management; young entrepreneurs

#### 1. Introduction

The begin of the 21st century is facing many social, economic and environmental challenges in Europe and worldwide. It is also digital age which brings opportunities to learn effectively with the use of artificial intelligence. The aim of this contribution is to introduce Kabada (Knowledge Alliance of Business Idea Assessment: Digital Approach) unique tool, together with opinions of young people about entrepreneurship. Our focus is primarily on students with low business background, who study natural sciences, engineering and other core areas at the Faculty of Forestry and Wood Technology at Mendel University in Brno, Czech Republic. Kabada was developed by a team of international experts and has been already tested at several higher education institutions. It is a tool which can be used for better forestry management and we suggest to use it in daily teaching of students preparing for forestry or related professions. Kabada is structured, Web-based platform that purports to take the guesswork out of business plan development. Informed by theoretical research, relevant statistics, and artificial intelligence (AI) insights, the tool guides new entrepreneurs through every step of the way, helping them understand where they stand, where and how they might consider going, and what challenges and opportunities lie ahead [1]. This tool can be used to improve forester management skills as well as to be helpful for forest entrepreneurs. In the digital age, skills needed for successful entrepreneurship can be obtained by using automated software with machine learning and artificial intelligence. This is widely used in both business and everyday life and we suggest to use it also in education and other areas of societal life [2].

Entrepreneurship is introduced in various ways including economic, psychological, sociological or legal aspects. The economic concept stresses the fact, that it is a dynamic process creating added

value. The psychological concept is focused on achieving self-fulfillment, cutting loose, becoming independent, etc. The sociological concept introduces entrepreneurship as creating prosperity for all those interested, looking for ways to better use resources, creating jobs and opportunities, while the legal concept is grounded in effective legislation [3]. Becoming an entrepreneur offers young people the opportunity to deepen their human capital attributes, such as self-reliance or skill development, and to increase their level of happiness. Among societal benefits we can name creation of jobs, increasing innovation, raising competition and responding to changing economic opportunities and trends. There are latent entrepreneurs amongst young people. Two-in-five young people in the EU would like to set up their business, as suggested by Euro Flash barometer data. For this reason, youth entrepreneurship is attractive to policy makers. Youth entrepreneurship in EU (self-employment) rates are low relative to the adult population and males and 'older' young people are more likely to be in entrepreneurship [4].

Europeans in general prefer to be self-employed (45%) or employed (50%) as mentioned in the EU twenty-five member states survey and US, Norway and Iceland in comparison with US, where European citizens like to be employed, whereas Americans prefer being self-employed. These attitudes have not changes since 2004. Young people from 15-24 years old incline to a greater extent to entrepreneurship than other age groups and 51% of respondents aged 15-24 would like to have their own business, when comparing the US to the EU25. For other age groups, the figures are falling down, such as 41% for 25-39 old or less than 30% for older ones [5].

Youth entrepreneurship is often introduced in the context of youth unemployment. Long term unemployment has serious influence on individuals including reduced earnings and social exclusion. In 2011, one-in-five young people in the EU were unemployed. The level of youth unemployment was very high in several EU member states, with rates of over 50% recorded in Spain and Greece in 2013. Naturally, creation of employment opportunities, sustainable growth, promotion of youth entrepreneurship and making Europe more entrepreneur-friendly has become a priority on the EU policy agenda [6]. With the economic and financial crisis after 2008, youth unemployment has reached 'alarming levels' in some EU member states. Youth unemployment, like unemployment in general, has many undesirable economic, social, and political consequences for societies and individuals alike [7].

The research confirms that more men tend to be self-employed than women [8]. On average, the proportion between men and women in business is 1.9 [9]. In the case of Czech Republic, 2.6 times more men than women do business and there is a significant dominance of university graduates [10]. The number of active female entrepreneurs has been growing continually in the Czech Republic, unlike the number of active male entrepreneurs, which has been stable since 2011. There is also a long-term trend in the Czech Republic, with a growing number of self-employed people who do business as a secondary activity. The number of people whose business is their core activity is decreasing [11].

To start a business and continue the activities, people should be motivated. According to Jirovská [12], people start doing business as a result of two causes - either due to negative events and dissatisfaction at work, risk of unemployment or no opportunity for personal growth (so-called push theory), or because of attractive opportunities available on the market (so-called pull theory). Williams, Round and Rodgers [13] are critical about this classification of entrepreneurs to those "forced" to do business and those who use market opportunities. People usually decide to do business based on a combination of push and pull factors, and the incentives of entrepreneurs change over time.

The optimistic outlook is that people see their self-employment as an opportunity. In the EU 15 (as well as the EU 25), almost 60% of respondents think starting a business is more an opportunity than a necessity. Lack of funds was found to be the main obstacle in doing business. Further obstacles are complexity of administration as well as insufficient information on how to start a business [5]. Staniewski and Awruk [14] identified as main factors motivating people to start their own business personal self-fulfillment and self-satisfaction, the possibility of higher earnings and independence in

decision making. Authors identified as the main factors in potential businessmen preventing them from starting business a lack of experience, capital and the risk of failure.

The importance of responsible business lies in reflecting the core values of society. Responsible business is essential for businesses large and small, which can improve their economic, environmental and social performance in the short and long term through innovative products and services, new skills and stakeholder engagement. It involves a commitment by a company to conduct its economic activities in an efficient, socially and environmentally responsible manner, taking into account the interests of all stakeholders. Key approaches to promoting sustainable development include an emphasis on a process approach, non-financial performance of the business and sector stability. The success of companies in a highly competitive environment depends on their ability to adapt to the ever-changing demands of customers and to the development of knowledge and associated new technologies in the production of different products, new information systems, etc. At the same time, enterprises must fulfil a number of other functions, particularly those related to the social and environmental aspects of business. In the context of these tasks, the concept of sustainable business is emerging, the principles of which many companies are already incorporating into their strategic plans and many of which are already being implemented.

Thanks to climate change, the agriculture and forestry sector will face a number of challenges in the future, to which it will have to respond through sustainable innovation. It is therefore essential to explore approaches, tools and methods that will contribute to meeting these challenges. Nowadays, the survival of businesses depends not only on economic performance, but also on demonstrating a positive attitude towards the various stakeholders affected by the company's activities. In other words, businesses face increasing pressure from their environment to act in a socially responsible manner [15]. The increasing importance of environmental protection has an impact on all activities of the enterprise.

A business that does not focus only on short-term profit but also considers the principles of long-term sustainability can be called a sustainable business that is based on the above-mentioned principles of sustainable development [16]. According to the Vrabcova et al. [17], the fundamental starting point is environmental friendliness, both locally and globally. With dwindling supplies of natural resources, the demand for sustainable products and consumption is growing exponentially. Authors Orecchini et al.; Ahi and Searcy; Hajek and Kubová agreed that sustainability is becoming a fundamental principle for businesses [18, 19,20]. Sustainability research is continuously expanding, as evidenced by researches such as Teece [21], Wichaisri and Sopadang [22] and Zemigala [23].

As stated by Hummels and Argyrou [24], one of the ways to overcome the dichotomy between current and future generations and the tension between discourses is sustainable entrepreneurship. The authors stress that sustainable business can make a significant contribution to improving environmental sustainability while operating a profitable business. Salmivaara and Kibler [25] add that current generations support entrepreneurial activities that are assumed to contribute to sustainable development, ignoring the fact that entrepreneurship potentially brings negative externalities.

Patzelt and Shepherd [26] define sustainable entrepreneurship as discovering, creating and exploiting opportunities to create products that sustain the natural environment and provide development opportunities for other stakeholders. Kuckertz and Wagner [27] or Vrabcova and Urbancova [28] add to the theme of sustainable entrepreneurship that it is those businesses that aim to manage the triple bottom line.

Sustainable business models [29] are primarily tools to ensure the social and environmental sustainability of systems. The ability to quickly and successfully transition to these business models is an important source of sustainable competitive advantage [30] and a key factor for improving the performance of organizations and supply chains [19]. As competition increases, it is advisable to demonstrate to customers that an organization provides a quality product that does not harm the environment or endanger the health of its employees [31]. Product quality is assured by qualified personnel, correct and verified production procedures and ensuring qualified production processes, reliable production equipment, appropriate measuring, inspection and testing equipment. However,

as Geissdoerfer et al. [30] reports, many business model innovations fail, and the reasons for these failures are hardly explored [16].

Sustainable business models are defined by Schaltegger et al. [32] as the creation of customer and social value through the interaction of social, environmental and business activities. To this definition, Geissdoerfer et al. [33], Geissdoerfer et al. [30] or Nosratabadi et al. [16] add additional stakeholders that an organization needs to create, deliver, capture and exchange sustainable value. What these definitions have in common is that they see sustainable business models as a modification of conventional business models with added characteristics, namely incorporating sustainability-focused concepts, principles or goals or integrating sustainability into value propositions or mechanisms [30].

Examples of sustainable business models include sustainable start-ups [34] [35], transformation to a sustainable business model [16] or social enterprises [36], which aim for social impact by generating profits from economic activity. Cooney [37] bases sustainable business on the following principles: sustainability principles are incorporated into all management activities; environmentally friendly products are an appropriate alternative to less sustainable alternatives; sustainable business is a pathway to competitiveness and respects environmental principles in operations. Baumgartner [38] adds to the above, if sustainability aspects are not part of the mindset of an organization's managers, they will not be effective and are very likely to fail.

Despite extensive research on sustainable business models, there is no comprehensive picture of how businesses in different sectors can implement sustainability into their business models [16]. However, some authors [34] have addressed a number of trends that can be seen as drivers of sustainability-related business model innovation. These include in particular the circular economy [16], corporate social responsibility [39] [40] [41] [42] [43], the sharing economy [44], technological innovation [45] and lean manufacturing [22]. Developing sustainable business model innovations in agriculture and forestry is important [46], as the sector is inherently linked to respect for nature and its resources.

As stated above, sustainable business is based on the principles of sustainable development, which requires simultaneous and balanced progress in 3 areas that are relatively independent - social, economic and environmental [19]. The basic assumptions of the social pillar include the eradication of poverty [47] [48], both within and between regions and in global settings between countries and geopolitical entities [49]. Equal access to basic sanitation and medical care, the suppression of manifestations of discrimination, racism as well as xenophobia and religious intolerance are all encompassed within the social pillar [49]. The social domain can be thought of as a group of external and internal elements; internal elements include issues such as occupational health and safety, employee training, job satisfaction, equal opportunities, gender, ethnic, age and other balanced employee mix, turnover rates, non-discrimination of any type, and others. The external social pillar may include corporate giving, volunteering, social integration, assistance to disadvantaged groups, employment development, debt prevention, education promotion, consumer protection, etc. [49.] The economic pillar, according to Baumgartner and Rauter [50], consists of all economic activities, the interactions between them, and the interactions between the environment and society.

Most common (macro)economic indicators correspond to the growth orientation of mainstream economies. Thus, costs, losses and natural resource degradation are not considered. To illustrate this, the following example can be given: the reported macroeconomic indicator of gross national or domestic product includes, without distinction, activities that contribute to well-being and activities whose consequences clearly degrade the quality of life and the environment. These include, for example, arms production, environmentally damaging agricultural practices, and the devastation of land by strip mining. In relation to the economic sphere, we can mention for example [50]: code of ethics and other strategic documents, transparency and combating corruption, after-sales service to customers, protection of intellectual property (in the form of patents, utility models, prototypes, etc.). In the last, the environmental area, some important factors can be mentioned [51]: mainly the amount and type of waste in the organization, the consumption of renewable and non-renewable resources,

water and energy consumption, hazardous chemicals and their handling, greenhouse gas emissions, ecological footprint, carbon footprint, biodiversity protection, etc.

Voluntary tools that companies can apply to promote sustainable business include: in the context of the internal social area, age management, while the external and internal social area is represented in the research by corporate social responsibility. Within the economic area, strategic documents such as the corporate strategy and a number of functional strategies can be discussed, the implementation of which is quite crucial not only for agricultural and forestry enterprises, such as the code of ethics, organizational culture strategy, ergonomic, environmental, innovation strategy and others. In relation to the environmental pillar of sustainable development, the possibilities of including non-market ecosystem services in environmental management accounting can be discussed, as well as selected aspects of the carbon footprint and its specifics when calculated in a forest enterprise.

#### 2. Materials and Methods

The Kabada tool was developed in years 2019-2022 in cooperation of these institutions: BA School of Business and Finance (Riga, Latvia, Coordinator), Vilniaus kolegija / University of Applied Sciences (Vilnius, Lithuania), Mendel University in Brno (Brno, Czech Republic) Polytechnic Institute of Setúbal (Setúbal, Portugal), ArtSmart (Riga, Latvia), Youth Entrepreneurship Promotion Association (Lithuania), Centro Studi "Cultura Sviluppo" (Italy), JSC "Development Finance Institution Altum" (Riga, Latvia) and SWH SETS Ltd (Riga, Latvia). Authors of this contribution are project team members [1].

From autumn 2022 it was tested by potential users. We have conducted a research which consisted of survey number 1 given before using Kabada tool. Students filled in a survey on-line and later listed to a seminar where Kabada tool was introduced. They accessed the Kabada platform, followed the steps of a user and tried to make their own business plan. After this experience they were asked to fill in survey number 2. The aim of the pre and post survey was to find out what is the self-assessment of students related to entrepreneurship and how does it change after Kabada experience.

Our respondents were students from Mendel University in Brno, Czech Republic. The sample of students consisted of 60 respondents before using Kabada tool, specifically 41 students from Czech Republic, 1 student from Slovakia, Germany, China, Zambia, Italy, Latvia, 2 students from Zimbabwe, Ghana, Israel, 3 students from Bosnia and Herzegovina, 4 from Spain. As for gender, 26 students were female students and 34 males. Most students were from age group 18-21 years (32 students), followed by 18 students aged 22-25 and 10 students aged 26 or older. Most students (51) were undergraduate (bachelors' level) and 9 were 9 master students. The fields of studies were the following: Business management, administration or related field (2 students), Life science (1 student), Education (1 student), Engineering (25 students), Economics, finance (6 students), Natural sciences, mathematics, information technologies (25 students).

#### 3. Results

#### 3.1. Digital Approach -KABADA Tool

Kabada is informed by theoretical research, relevant statistics, and artificial intelligence insights. The tool can be a used as a guide to anybody interested in entrepreneurship through important steps [1]. The tool is intended for use by a wide audience. The primary target audience is entrepreneurs, students, university lecturers, business consultants, development finance institutions and related. It is important to note that the tool is suitable not only for existing and future professionals in the field of business and management, but also for future or existing professionals in any field, including forestry, where business projects are planned and whose representatives start new business initiatives too. During the development process of the tool, its structure was created based on classic business plan development principles and content. When working with the tool, the business project

planner sequentially goes through six large blocks - industry statistics, industry risks, creating a business model canvas, SWOT analysis, personal characteristics analysis and financial projections.

The first two blocks in the structure of the Kabada tool inform its user about the statistical trends of the selected industry in the country where it is planned to do business, comparing them also with the trends of the industry throughout the European Union. The source of statistical data is Eurostat, the statistical office of the European Union. Also, the user of the tool is introduced to the risks at the macro, industry and company levels, which are typical for companies in the selected industry. The macro level of risk analysis is based on the PESTE (political, economic, social, technological, environmental factors) analysis. Industry-level risks are analyzed using Michael Porter's Five Forces Framework, that was first published in Harvard Business Review in 1979 [52]. The development of a business model within the framework of the Kabada tool takes place using the Business Model Canvas. It consists of the nine "building blocks" of the business model design template that came to be called the Business Model Canvas and was initially proposed in 2005 by Swiss business theorist Alexander Osterwalder [53]. In the next block of the tool, its user performs a SWOT (strengths, weaknesses, opportunities, threats) analysis for the purpose of creating a generic strategy. In both mentioned blocks, the user of the tool has to sequentially make choices from a set of options predefined by the system. Since it is important for a potential entrepreneur to be aware of his readiness to start a business, the system has another block in which the user completes a test, assessing his entrepreneurial abilities, knowledge and external circumstances that can either help or hinder the conduct of business. Financial projections are the final block of the Kabada tool. It is connected to the Business Model Canvas previously developed by the user. Thus, when filling out the financial projections section, the user must enter numbers against various types of assets, liabilities, revenue streams, cost items, initial investment. After completing this task, the system generates a cash flow statement for the first period of operations.

Artificial intelligence algorithms are also built into the Kabada tool, which provides for gradual learning of the system from the business plans created in the system. As a result, the user, while working in the tool, receives artificial intelligence advice in various places when has to make choices.

The Kabada tool includes significant work with big data. This is due to both a huge amount of data from external resources, such as Eurostat Structural Business Statistics data base, and internal resources of the system, such as business plans created in the system. The volume of Eurostat business statistics data is immense, and the Kabada system must be able to extract from it exactly the necessary information within the relevant industry and country, as well as create combined images with various indicators so that the user can easily perceive the trends of the industry's development using different absolute and relative indicators. Also, the system is gradually filled with a large number of business plans, which contain extensive information about business models, financial projections, which the system must be able to process and offer easy-to-understand recommendations to the users. The Kabada tool is available on-line and is free of charge. It can be accessed here [1]: https://kabada.eu/.

#### 3.2. Self-Assessment of Entrepreneurship by Students

The Kabada tool has been introduced to university students to ask them for self-assessment of entrepreneurship knowledge and skills before (Survey 1) and after (Survey 2) using the tool. Based on the results from Survey 1 and 2, majority of students (85%) had no entrepreneurship training or study course before. Students decided on a scale from 1 (very poor knowledge) until 7 (excellent knowledge) about their knowledge of entrepreneurship. Before using Kabada tool, from 60 respondents, 10 students declared that their knowledge of entrepreneurship is average. Better knowledge that average was mentioned by 8 students, including 2 with excellent knowledge. The rest of students, 42 students, have lower level than average, including 15 students who self-assessed their poor knowledge. We can conclude that majority from our sample of 60 students had poor knowledge of entrepreneurship. After introducing Kabada tool, 18 students declared that their knowledge of entrepreneurship is average and for 19 more it is even higher. The entrepreneurship aware students increased from 18 (30%) to 37 (64%) after experienced Kabada tool.

From our sample, 13 students have an average intention to become an entrepreneur and 23 have even higher intention. It is quite surprising in relation to previous question, where only 18 students had some kind of knowledge about entrepreneurship but 36 have intention to be active entrepreneurs. 24 students had lower intentions than average to become entrepreneurs. After Kabada experience, the number of students who intended to become an entrepreneur increased from 36 (60%) to 45 (78%).

In general, 38 students (63%) had no experience in entrepreneurship so far, 15 (25%) of them had a few, 6 (10%) had some kind of experience and 1 (2%) was very experienced. Majority of students had no or very low experience with entrepreneurship.

The reply to statement "Entrepreneurship could fulfill your life", was positive by 44 (from 60) students agreed from average to strong agreement before using Kabada tool and 46 (from 58) students after using Kabada tool. About 73% from our sample could imagine that entrepreneurship could fulfill their life. After Kabada experience it was 79%.

About 75% of students (45 from 60) students agreed from average to strong agreement with the statement "Entrepreneurship interest me". Majority of students expressed interest in entrepreneurship. After using Kabada it was 76% (44 from 58).

With the statement "Starting an entrepreneurship would be easy for me" only 17 (28%) students agreed positively, the rest disagreed. For majority it would not be easy to start an entrepreneurship. After using Kabada tool, the proportion increased to 35% positive response. Here we can see positive influence of Kabada tool.

Survey 1 showed that majority of students 87% (52 from 60) does not understand how to plan an entrepreneurship, similarly 73% (44 from 60) does not understand risks and their management and 83% (50 from 60) does not know how to develop products, plan resources and engage needed partners. Survey 2, after using Kabada tool showed that majority of students 69% (40 from 58) does not understand how to plan an entrepreneurship, similarly 72% (42 from 58) they do not understand risks and their management and 85% (49 from 58) do not know how to develop products, plan resources and engage needed partners. We can see positive influence of Kabada tool on understanding of entrepreneurship planning and risk and management. For developing products, plan resources and engaging partners they would need more time to develop these skills, we believe.

Students were also asked the question: if I start my own entrepreneurship, I would have a high probability of succeeding. Majority does not agree with this statement 85% (51 students out of 60). After Kabada experience, 83%, 48 out of 58. It is quite surprising that 47% of students are neutral or considering to start or participate in entrepreneurship within the next 5 years (more or less the same after Kabada). This contains also neutral attitude, agreement and strong agreement. The importance of business skills for society in expressed 75% of students who consider entrepreneurship as socially significant activity (more or less the same after Kabada), including also neutral attitude, agreement and strong agreement.

### 4. Discussion

Based on the definitions given in the theoretical background, it can be summarized that sustainable development is a complex set of principles that allow the use of economic tools and technologies to meet the needs of people while fully respecting environmental limits, while adapting the perceptions of individuals, organizations and their processes. Responsible business is a concept in which companies voluntarily integrate social and environmental considerations into their business operations and stakeholder relations. It is therefore about the overall relationship of a company with all its stakeholders - customers, owner-investors, employees, public authorities, suppliers, competitors, communities, etc. It involves the commitment of the enterprise to develop its economic activities in an efficient and responsible manner towards society and the environment, taking into account the interests of all stakeholders. Each stakeholder influences the competitiveness of the company in its own way. Key approaches to promoting the concept of sustainable development and factors for competitiveness include an emphasis on a process approach, non-financial performance of the company and stability of the sector.

Private forest owners and forest entrepreneurs play an important role in all forms of forest ownership and management regimes, both in Europe and worldwide. The process of creating an entrepreneurial environment (i.e. starting a forestry business) is an important element of the entrepreneurial framework in any activity and in the forestry sector is also a prerequisite for sustainable forest management.

As might be expected, with a few exceptions [54], it is the business-oriented and timber-producing forest owners who are more likely to manage and harvest their stands. Groups of forest owners whose primary objective is not production but rather recreation (for themselves and family) are unlikely to engage in entrepreneurial activities [55].

Forest owners who are classified as indifferent or uninterested in entrepreneurial activities can take advantage of the new opportunities offered by this type of instrument. In the case of their lack of involvement in their own forests, it seems unlikely that they will be able to engage directly in entrepreneurial activities, but for others there may be opportunities to use their forests for entrepreneurial activities.

If a broader definition of innovation as novelty for the firm and its owner is used, the innovation activity of small firms whose owners are addressing many new ways would be incomparably higher. A few firms could be identified as based on some innovative technological development, but an important advantage was often compatibility with existing production/processing facilities [56].

Services have also been found to play a key role in developing and supporting business model innovation and improving existing products and processes [57]. Innovation has been shown to be more related to scale of operations than ownership structure, which is inevitably due to the huge differences in the size of forest enterprises and all the associated issues of access to technology, knowledge and markets [58].

According to the available country studies, it seems that entrepreneurship has often not even been a primary topic of interest or emphasis in forestry policy, although it is of great importance in societies in general [59]. One important influencing factor is certainly the common European labor market and the free movement of labor, as a promising opportunity for expanding the activities of entrepreneurs [60].

Capturing value for societal actors other than the enterprise itself and for the environment involved creating competitive advantage and additional revenue for key partners. These include, for example, promoting job creation, improving quality of life and consumption choices for users and customers, and reducing social and environmental impacts during production and in the overall product/service life cycle [56]. However, other studies also suggest the need for innovation (e.g., improved circularity and logistics) and challenging the traditional culture of forestry [61] [62] [63] [64].

For many forest owners, entrepreneurship is not a problem because they are primarily interested in forest management for personal or environmental reasons. In general, however, the issue of forest entrepreneurship certainly deserves further study. A possibility would be to link future studies to cultural differences and institutional characteristics of small-scale forestry, which usually strongly influence the level of forestry entrepreneurship. Our results show that students consider entrepreneurship to be a socially significant activity and business skills to be important. Although majority of students from our sample had no entrepreneurship training or study course before nor they had any or low experience, almost half of them is neutral or considering to start or participate in entrepreneurship within the next 5 years.

Our respondents were students with non-business background, but they do have general intentions to become entrepreneurs. After Kabada experience, the number of students who intended to become an entrepreneur increased from 60% to 78%. About 73% from our sample could imagine that entrepreneurship could fulfill their life. After Kabada experience it was 79%. Majority of students expressed interest in entrepreneurship. After using Kabada, 76% of students declared from average to strong agreement with the statement "Entrepreneurship interest me". Their knowledge of entrepreneurship was poor but after introducing KABADA tool, it increased. Using this tool would

9

help students to start business, as they expressed in their answers. We can see positive influence of Kabada tool on understanding of entrepreneurship planning and risk and management.

#### 5. Conclusions

Kabada tool was developed with the theoretical knowledge, relevant statistics, and artificial intelligence insights. This tool can be a used by anybody interested in entrepreneurship and we believe it is very suitable for people developing business skills related to forestry management or related fields. Kabada users go through six large blocks - industry statistics, industry risks, business model canvas, SWOT analysis, personal characteristics analysis and financial projections. Artificial intelligence algorithms are built into the Kabada tool, which provides for gradual learning of the system from the business plans created in the system. The user receives artificial intelligence advice in various places when has to make choices. The Kabada tool includes significant work with big data, such as Eurostat Structural Business Statistics data base and business plans created in the system.

**Author Contributions:** Conceptualization, E.A.P. and J.M.; methodology, E.A.P. and K.L.; software, K.L.; validation, E.A.P.; formal analysis, E.A.P. and J.M.; investigation, E.A.P. and K.L.; resources, E.A.P. and J.M.; data curation, K.L. and J.M.; writing—original draft preparation, E.A.P.; writing—review and editing, E.A.P. and J.M.; project administration, E.A.P.; funding acquisition, E.A.P. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by Erasmus+ KA2 Knowledge Alliances program, project KABADA/Knowledge Alliance of Business Idea Assessment: Digital Approach, project number: 612542-EPP-1-2019-1-LV-EPPKA2-KA.

Data Availability Statement: Not applicable.

**Conflicts of Interest:** The authors declare no conflict of interest.

#### References

- 1. KABADA consortium. Start off your business on the right foot. 2022; Available online: http://kabada.ba.lv/#/ (accessed on December 8, 2022).
- 2. Mavlutova, I., Lesinskis, K., Liogys, M., Hermanis, J. Innovative teaching techniques for entrepreneurship education in the era of digitalization. WSEAS Transactions on Environment and Development. 2020; Volume 16, pp. 725–733.
- 3. Veber, J., Srpová, J. Podnikání malé a střední firmy. Praha, Grada, Czech Republic, 2012.
- 4. Green, F. Youth entrepreneurship. OECD. 2013. Available online: https://www.oecd.org/cfe/leed/youth\_bp\_finalt.pdf (accessed on November 10, 2022).
- Eurobarometer (2007). Entrepreneurship survey of the EU (25 Member States), United States, Iceland and Norway. Available online: https://europa.eu/eurobarometer/surveys/detail/560 (accessed on October 15, 2022).
- 6. Mascherini, M. et al. Youth entrepreneurship in Europe: Values, attitudes, policies, Eurofound. 2015. Available online: https://policycommons.net/artifacts/1841442/youth-entrepreneurship-in-europe/2584928/ (accessed on January 2, 2023).
- 7. Tosun, J., Mierina, I., Shore, J., Atci, M., Hörisch, F. Youth Entrepreneurship in Europe. 2016. Available online:

  https://www.researchgate.net/profile/Jale-Tosun/publication/292286462\_Youth\_Entrepreneurship\_in\_Europe/links/56ac894d08ae28588c5f36e9/Youth-Entrepreneurship-in-Europe.pdf (accessed on October 20, 2022).
- 8. Cañizares, S. S., García, F. F. Gender differences in entrepreneurial attitudes. Equality, Diversity & Inclusion, 2010; Volume 29(8), pp.766-786. doi:10.1108/02610151011089519.
- 9. Koellinger, P., Minniti, M., Schade, C. Gender Differences in Entrepreneurial Propensity. Oxford Bulletin Of Economics And Statistics, 2013; Volume 75(2), pp. 213-234.
- 10. Lukeš, M., Jakl, M., Zouhar, J. (2014). Global Entrepreneurship Monitor 2013. 2014. Podnikatelská aktivita v České republice. Praha: TACR, MPO, GEM, VŠE.
- 11. AMSP ČR. Analýza AMSP ČR. Srovnávací analýza podnikatelů a podnikatelek. 2016. Available online: http://www.amsp.cz/zeny-valcuji-muze-v-poctunove-zalozenychzivnosti?highlightWords=srovn%C3%A1vac%C3%AD+anal%C3%BDza+podnikatel%C5%AF+podnikatelek (accessed on September 10, 2022).

- 12. Jirovská, E. Analýza pozitivních a negativních faktorů působících na zakladatelskou aktivitu v ČR a jejich krajské odlišnosti. 2003; Praha, KUFR.
- 13. Williams, C. C., Round, J., Rodgers, P. Evaluating the motives of informal entrepreneurs: some lessons from Ukraine. Journal Of Developmental Entrepreneurship. 2009; Volume 14(1), pp. 59-71.
- 14. Staniewski, M., Awruk, K. Motivating Factors and Barriers in the Commencement of One's Own Business for Potential Entrepreneurs. Ekonomska Istrazivanja/Economic Research. 2015; Volume 28(1), pp.583-592.
- Bučiúniene, I., Kazlauskaité, R. The linkage between HRM, CSR and performance outcomes. Baltic Journal of Management, Oxford: Emerald Group Publishing Limited. 2012; Volume 7. No. 1., pp. 5-24. ISSN 1746-5265.
- 16. Nosratabadi, S., Mosavi, A., Shamshirband, S., Kazimieras Zavadskas, E., Rakotonirainy, A., Chau, K. W. Sustainable business models: A review. Sustainability. 2019; Volume 11(6), 1663. DOI: 10.3390/su11061663.
- 17. Vrabcová, P., Smolová, H., Urbancová, H., Fajčíková, A. Strategie bioekonomiky pro udržitelnou Evropu a iniciativa BioEast. Prameny a studie. 2019; Volume 64, pp. 17–28.
- 18. Orecchini, F., Valitutti, V., Vitali, G. Industry and academia for a transition towards sustainability: advancing sustainability science through university–business collaborations. Sustainability science. 2012; Volume 7(1), pp. 57–73. DOI: 10.1007/s11625-011-0151-3.
- 19. Ahi, P., Searcy, C. A comparative literature analysis of definitions for green and sustainable supply chain management. Journal of cleaner production. 2013; Volume 52, pp. 329–341. DOI: 10.1016/j.jclepro.2013.02.018.
- 20. Hájek, M., Kubová, P. Identification of Basic Trends in Public Expenditures of Environmental Protection in the Czech Republic. In Theoretical and Practical Aspects of Public Finance 2016. 2016; pp. 146–155.
- 21. Teece, D. J. Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. Strategic management journal. 2007; Volume 28(13), pp. 1319–1350. DOI: 10.1002/smj.640.
- 22. Wichaisri, S., Sopadang, A. Trends and future directions in sustainable development. Sustainable Development, 2018. Volume 26(1), pp. 1–17. DOI: 10.1002/sd.1687.
- 23. Zemigala, M. Tendencies in research on sustainable development in management sciences. Journal of Cleaner Production 2019; Volume 218, pp. 796–809. DOI: 10.1016/j.jclepro.2019.02.009.
- 24. Hummels, H., Argyrou, A. Planetary demands: Redefining sustainable development and sustainable entrepreneurship. Journal of Cleaner Production. 2021; Volume 278, 123804. DOI: 10.1016/j.jclepro.2020.123804.
- 25. Salmivaara, V., Kibler, E. "Rhetoric Mix" of Argumentations: How Policy Rhetoric Conveys Meaning of Entrepreneurship for Sustainable Development. 2020. Entrepreneurship Theory and Practice. 2020; Volume 44, Issue 4, pp. 700-732. 1042258719845345. DOI: 10.1177/1042258719845345.
- 26. Patzelt, H., & Shepherd, D. A. Recognizing opportunities for sustainable development. Entrepreneurship Theory and Practice. 2011; Volume 35(4), pp. 631–652. DOI: 10.1111/j.1540-6520.2010.00386.x.
- 27. Kuckertz, A., Wagner, M. The influence of sustainability orientation on entrepreneurial intentions—Investigating the role of business experience. Journal of business venturing. 2010; Volume 25(5), pp. 524–539. DOI: 10.1016/j.jbusvent.2009.09.001.
- 28. Vrabcová, P., Urbancová, H. The Approach of Czech Business entities to the promotion and application of the corporate social responsibility. In Hradecké ekonomické dny. 2021. Volume 11(1), pp. 870–880. DOI: 10.36689/uhk/hed/2021-01-086.
- 29. Ludeke-Freund, F. Towards a conceptual framework of business models for sustainability. In Knowledge collaboration & learning for sustainable innovation; Wever, R., Quist, J. Tukker, A. Woudstra, J., Boons, F. Beute, N. eds., Delft, NL, 2010; pp. 25–29.
- 30. Geissdoerfer, M., Vladimirova, D., Evans, S. Sustainable business model innovation: A review. Journal of cleaner production. 2018; Volume 198, pp. 401–416. DOI: 10.1016/j.jclepro.2018.06.240.
- 31. Veleva, V., Hart, M., Greiner, T., Crumbley, C. Indicators of sustainable production. Journal of Cleaner Production. 2001; Volume 9(5), pp. 447–452. DOI: 10.1016/S0959-6526(01)00010-5.
- 32. Schaltegger, S., Ludeke-Freund, F., Hansen, E. G. Business cases for sustainability: the role of business model innovation for corporate sustainability. International journal of innovation and sustainable development. 2012; Volume 6(2), pp. 95–119. DOI: 10.1504/IJISD.2012.046944.
- 33. Geissdoerfer, M., Bocken, N. M., Hultink, E. J. (2016). Design thinking to enhance the sustainable business modelling process–A workshop based on a value mapping process. Journal of Cleaner Production. 2016. Volume 135, pp. 1218–1232. DOI: 10.1016/j.jclepro.2016.07.020.
- 34. Todeschini, B. V., Cortimiglia, M. N., Callegaro-de-Menezes, D., Ghezzi, A. Innovative and sustainable business models in the fashion industry: Entrepreneurial drivers, opportunities, and challenges. Business Horizons. 2017; Volume 60(6), pp. 759–770. DOI: 10.1016/j.bushor.2017.07.003.
- 35. Smolová, H., Kubová, P., Urbancová, H. Success factors for start-ups related to agriculture, food and nutrition and their relevance to education. Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis. 2018; Volume 66(3), pp. 791–801. DOI: 10.11118/actaun201866030791.

- 36. Powell, M., Osborne, S. P. Can marketing contribute to sustainable social enterprise? Social Enterprise Journal. 2015. DOI: 10.1108/sej-01-2014-0009.
- 37. Cooney, S. Build a green small business: Profitable ways to become an ecopreneur. 2009. New York, NY: McGraw-Hill.
- 38. Baumgartner, R. J. Organizational culture and leadership: Preconditions for the development of a sustainable corporation. Sustainable development. 2009; Volume 17(2), pp. 102–113. DOI: 10.1002/sd.405.
- 39. Ciccullo, F., Pero, M., Caridi, M., Gosling, J., Purvis, L. Integrating the environmental and social sustainability pillars into the lean and agile supply chain management paradigms: A literature review and future research directions. Journal of Cleaner Production. 2018; Volume 172, pp. 2336–2350. DOI: 10.1016/j.jclepro.2017.11.176.
- 40. Klarin, T. The concept of sustainable development: From its beginning to the contemporary issues. Zagreb International Review of Economics and Business. 2018. Volume 21(1), pp. 67–94. DOI: 10.2478/zireb-2018-0005
- 41. Fortunati, S., Morea, D., Mosconi, E. M. Circular economy and corporate social responsibility in the agricultural system: Cases study of the Italian agri-food industry. Agricultural Economics. 2020; Volume 66(11), pp. 489–498. DOI: 10.17221/343/2020-AGRICECON.
- 42. Vrabcová, P., Urbancová, H. The Approach of Czech Business entities to the promotion and application of the corporate social responsibility. In Hradecké ekonomické dny. 2021; Volume 11(1), pp. 870–880. DOI: 10.36689/uhk/hed/2021-01-086.
- 43. Vrabcová, P., Urbancová, H. Approaches of selected organizations in the Czech Republic to promoting the concept of sustainable development and corporate social responsibility. Agricultural Economics. 2021; Volume 67(7), pp. 255–265. DOI: 10.17221/8/2021-AGRICECON.
- 44. Leung, X. Y., Xue, L., & Wen, H. Framing the sharing economy: Toward a sustainable ecosystem. Tourism Management. 2019; Volume 71, pp. 44–53. DOI: 10.1016/j.tourman.2018.09.021.
- 45. Coccia, M. Measuring the impact of sustainable technological innovation. International Journal of Technology Intelligence and Planning. 2009; Volume 5(3), pp. 276–288. DOI: 10.1504/IJTIP.2009.026749.
- 46. Franceschelli, M. V., Santoro, G., Candelo, E. Business model innovation for sustainability: a food start-up case study. British Food Journal. 2018; Volume 120, Number 10, pp. 2483-2494. DOI: 10.1108/BFJ-01-2018-0049.
- 47. Sengupta, M. Transformational Change or Tenuous Wish List? A Critique of SDG 1 ('End Poverty in All Its Forms Everywhere'). Social Alternatives. 2018; Volume 37(1), pp. 12–17.
- 48. Kang, K., Wang, M., Luan, X. Decision-making and coordination with government subsidy and fairness concerns in poverty alleviation supply chain. Computers & Industrial Engineering. 2020; Volume 152, February 2021, 107058. DOI: 10.1016/j.cie.2020.107058.
- 49. Cobbinah, P. B., Erdiaw-Kwasie, M. O., Amoateng, P. Rethinking sustainable development within the framework of poverty and urbanisation in developing countries. Environmental Development. 2015; Volume 13, pp. 18–32. DOI: 10.1016/j.envdev.2014.11.001.
- 50. Baumgartner, R. J., & Rauter, R. Strategic perspectives of corporate sustainability management to develop a sustainable organization. Journal of Cleaner Production. 2017, Volume 140, pp. 81–92. DOI: 10.1016/j.jclepro.2016.04.146.
- 51. Sengupta, S., Sahay, A. Comparing mission statements of social enterprises and corporate enterprises in the new and renewable energy sector of India: a computer aided content analysis study. Journal of Global Entrepreneurship Research. 2017; Volume 7:21, pp. 1-16. DOI: 10.1186/s40497- 017-0079-x.
- 52. Porter, M.E. How Competitive Forces Shape Strategy. Harvard Business Review. 1979; Volume 57/2, pp. 137–145.
- 53. Osterwalder, A. What is a business model? 2005. Available online: Business-model-design.blogspot.com. Archived from the original from 2006 (accessed on October 2022).
- 54. Kuuluvainen, J., Karppinen, H., Ovaskainen, V. Landowner objectives and nonindustrial private timber supply. Forest Science. 1996; Volume 42(3), pp. 300-309.
- 55. Ní Dhubháin, Á., Cobanova, R., Karppinen, H., Mizaraite, D., Ritter, E., Slee, B., Wall, S. The values and objectives of private forest owners and their influence on forestry behaviour: the implications for entrepreneurship. Small-scale Forestry. 2007; Volume 6(4), pp. 347-357.
- 56. D'Amato, D., Veijonaho, S., Toppinen, A. Towards sustainability? Forest-based circular bioeconomy business models in Finnish SMEs. Forest policy and economics. 2020; Volume 110, 101848.
- 57. Pelli, P., Haapala, A., Pykäläinen, J. (2017). Services in the forest-based bioeconomy–analysis of European strategies. Scandinavian Journal of Forest Research. 2017; Volume 32(7), pp. 559-567.
- 58. Šálka, J., Longauer, R., Lacko, M. The effects of property transformation on forestry entrepreneurship and innovation in the context of Slovakia. Forest Policy and Economics. 2006; Volume 8(7), pp. 716-724.
- 59. Niskanen, A., Lunnan, A., Ota, I., Blatner, K., Herbohn, J., Bull, L., Hickey, G. M. Policies affecting forestry entrepreneurship. Small-scale Forestry. 2007; Volume 6(3), pp. 233-255.

12

- 60. Šporčić, M., Landekić, M., Papa, I., Lepoglavec, K., Nevečerel, H., Seletković, A., Bakarić, M. Current status and perspectives of forestry entrepreneurship in Croatia. South-east European forestry: SEEFOR. 2017; Volume 8(1), pp. 21-29.
- 61. Hansen, E. Responding to the bioeconomy: Business model innovation in the forest sector. In Environmental impacts of traditional and innovative forest-based bioproducts. 2016, pp. 227-248. Springer, Singapore.
- 62. Manninen, K., Koskela, S., Antikainen, R., Bocken, N., Dahlbo, H., Aminoff, A. Do circular economy business models capture intended environmental value propositions? Journal of Cleaner Production. 2018; Volume 171, pp. 413-422.
- 63. Reim, W., Sjödin, D., Parida, V., Rova, U., Christakopoulos, P. Bio-economy based business models for the forest sector. A systematic literature review. In International scientific conference RURAL DEVELOPMENT 2017. 2017; pp. 775-780
- 64. Korhonen, J., Hurmekoski, E., Hansen, E., Toppinen, A. Firm-level competitiveness in the forest industries: Review and research implications in the context of bioeconomy strategies. Canadian Journal of Forest Research. 2018; Volume 48(2), pp. 141-152.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.