

Online financial calculator as a microlearning tool for entrepreneurs in business modelling

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ABSTRACT

Objective: The article aims to present the opportunities of the practical use of an online financial calculator considered as an improvement when compared to already existing tools and as a supplement to Osterwalder and Pigneur's business model canvas. It facilitates the calculations required by entrepreneurs and start-ups to assess data related to financial forecasting.

Research Design & Methods: The article adopts a conceptual analysis approach and a statistical evaluation of the proposed financial calculator by 58 Polish entrepreneurs. The latter tested the calculator and assessed its functionality, listing the most interesting aspects.

Findings: The results demonstrate that forecasting the payback period over several years is the most useful function offered by the proposed online financial calculator. The second most important element is its calculation of an estimation of investment costs, which is useful for start-ups and entrepreneurs. The conceptual analysis findings consider the tool to be a form of 'microlearning' and an improvement on existing tools. The article demonstrates how it can be easily used by entrepreneurs and start-ups for conducting financial calculations.

Implications & Recommendations: An analysis of the already existing financial tools indicates that they are either too simple or too complex. The proposed online financial calculator supplements the information inputted into the cost structure and revenue model elements in the business model canvas. The financial calculator ought to act as a tool that significantly supplements the business model canvas.

Contribution & Value Added: This article addresses a gap in the literature related to criticism directed towards the business model canvas. The latter does not allow for any financial calculations. The inclusion of the financial calculator with the business model canvas enables the provision of new financial insights. It enables entrepreneurs to assess when economic viability will be achieved. Considered a simple and easy-to-use microlearning tool, the financial calculator is user-friendly and it allows for the inputting of data (multiple times, if required) in a brief period, being both cost-effective (as it is publicly available online at no cost) and efficient due to the brief period required to use it. To date, there is no other adequate tool that may be used to determine the optimisation of assets of either a start-up or of an already existing enterprise. Neither is there an adequate online financial tool that addresses the cost structure and revenue streams elements in the business model canvas.

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INTRODUCTION

This article proposes the use of an online financial calculator as a supplement to the cost structure and revenue streams elements in Osterwalder and Pigneur's (2010) business model canvas (BMC). This tool is available as part of the 'Understanding and Developing Business Models in the Globalisation Era' (ProBM2) project, financed by the European Commission under Erasmus+ (University "Dunarea de Jos" of Galati, 2023). The project was based on the fact that more and more enterprises

are established every year, but less than 40% of them survive for more than the first five years. One problem appears to be that entrepreneurs and start-ups do not sufficiently appreciate or value the power of business models nor do they pay adequate attention to the quantification of financial elements that would lead to increased sustainability and eventual scalability that are both important considerations, particularly at the stage of enterprise creation.

The use of an online financial calculator, which is presented as a form of 'microlearning,' is considered as an improvement when compared to already existing tools, some of which are discussed in this article. Its use facilitates the calculations required by entrepreneurs and start-ups to assess data related to financial forecasting, including the break-even point (BEP) and internal rate of return (IRR). Therefore, the article aims to present an online financial calculator, which the authors consider as an improvement when compared to already existing tools and as a supplement to Osterwalder and Pigneur's business model canvas. This is in line with the views of Rauch and Hulsink (2015) who researched the effectiveness of entrepreneurial behaviour. In their view, 'teaching people how to write a business plan is not enough' (p. 201). They suggest that entrepreneurship education ought to apply theoretical concepts to the real world. The online financial calculator is an easy-to-use and user-friendly microlearning tool. It allows for the inputting of data (multiple times, if and when required) in a brief period, thus being both cost-effective (as it is publicly available online at no cost) and efficient, as the time required to use it is approximately 15 minutes. To date, there is no adequate tool that may be used to determine the optimisation of assets of either a start-up or of an already existing enterprise. Neither is there an adequate online tool that addresses the cost structure and revenue streams elements in the business model canvas in financial terms and which allows for an evaluation of investment costs and a consideration of the time required by an enterprise to break even.

This article was inspired by Lehman and Bidmon (2021) who suggested the use of a Business Coaster as a tool to support students to better deal with the financial elements (i.e. the revenue streams and cost structure) on Osterwalder and Pigneur's (2010) BMC. Their proposal aimed to support 'students and entrepreneurs alike' to overcome what they claim is a 'difficult task,' to address questions related to the 'profit formula' and to deal with the manner in which an enterprise can monetise the value it creates. Lehman and Bidmon (2021) correctly draw attention to the fact that problems related to financial viability may arise, due to the absence of specific financial elements in the BMC. They further claim that students who learn about business models would rightly expect to learn more about the commercialisation and monetization of their new business ideas. This article claims that the proposed online financial calculator is an improvement on Lehman and Bidmon's (2021) Business Coaster proposal. It offers entrepreneurs a simple and explicit microlearning method to calculate costs related to investments when conducting business modelling. It is easy to complete, and it offers clear and concise results.

The article will start with a critical discussion of Osterwalder and Pigneur's (2010) business model canvas and provide an overview of business models. An assessment of existing available financial tools will follow, including a discussion on financial literacy. The research methodology will be then outlined, followed by an analysis and discussion of the results of this research. The article will conclude with a summary and some reflections.

The article addresses a gap in the literature concerning criticism directed towards the business model canvas, which does not include any financial calculations or financial forecasts. Supplementing the business model canvas with the financial calculator enables entrepreneurs and start-ups to assess when economic viability will be achieved and it enables the provision of new financial insights.

The paper is structured as follows. At first, we will focus on the definitions of business model concept, the identification of available tools for assessing the financial aspects of business models and the presentation of a financial calculator as a micro-learning tool. Subsequently, we will elaborate on the methodology of our study. We will then present our findings and finally, we will discuss the usefulness of the developed financial calculator in the business creation process.

LITERATURE REVIEW

The Business Model Canvas

Osterwalder and Pigneur's (2010) business model canvas (BMC) has achieved a great deal of success and popularity, mainly because it enables users to either design or visualize their business model through the completion of a clearly laid out template. The BMC offers the possibility to outline and assess one (or more) of its nine elements and to appraise the relationships between the elements. There has been a great deal of criticism directed towards Osterwalder and Pigneur's (2010) BMC. This is mainly directed towards three areas: (1) the sequence in which the BMC ought to be completed; (2) the absence of any financial quantification, and (3) the lack of strategic elements or strategy direction.

This article focuses on the financial element, mainly by proposing the use of a developed online financial calculator which acts as a tool to provide a better visualization of possible investments in an enterprise. The proposed online calculator may be used to (1) determine the optimisation of assets of a start-up or an already existing enterprise, and (2) demonstrate whether, where and how an enterprise's investments costs could be decreased to achieve optimal results related to two elements in the BMC, that is, cost structure and revenue streams. Although financial aspects are related to almost all the elements of the BMC, this article focuses mainly on the cost structure and revenue streams elements.

Some Basic Definitions of a Business Model

At the most basic level, a business model is defined in terms of an enterprise's economic model that provides a consistent logic for earning profits (Morris *et al.*, 2005; Andreini *et al.*, 2022; Paiola *et al.*, 2022). This approach treats a business model as an economic concept that, on the one hand, generates revenue for the company, and on the other hand, produces costs that will be incurred to ensure the continuity of revenue generation. This approach to business models has been adopted by various authors, whose definitions of the term echo Drucker's (1994) theory of business, where a business model is considered to be a set of assumptions about what a company gets paid for.

Authors who treat a business model as an economic concept include:

- Stewart and Zhao (2000) who define a business model as 'a statement of how a firm will make money and sustain its profit stream over time' (p. 290);
- Rappa (2010) who states that a business model is 'the method of doing business by which a company can sustain itself – that is generate revenue' (p. 2);
- Teece (2010), who states that 'a business model articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering that value' (p. 173);
- Gambardella and McGahan (2010), for whom a business model is a plan for profit generation that assumes the design of activities and the accumulation of resources 'that drive a wedge between operating costs and revenues by making the firm more efficient than rivals' (p. 263);
- Chesbrough (2012) who defines a business model as 'a useful framework to link ideas and technologies to economic outcomes' (p. 79).

These definitions focus on the financial components of a business model, namely, the cost structure and revenue streams, and their impact on the success of the enterprise. It is, therefore, necessary to understand how an enterprise makes and spends money and to visualise both the cost structure and revenue streams of a company (Dudin *et al.*, 2015), particularly when utilizing Osterwalder and Pigneur's (2010) BMC, *i.e.* the architectural configuration that helps entrepreneurs or business owners picture all the building blocks of a business model, which are portrayed as nine elements.

The cost structure element in the BMC refers to the various types of expenses a company incurs in its day-to-day operations. It covers investment costs, such as fixed costs (*i.e.* costs that do not change with an increase or decrease in the amount of goods or services produced or sold), and variable costs (*i.e.* costs that change, depending on the volume of production). The cost structure element further

addresses the question: How are costs allocated? This is a key element in a business model, because the maximisation of profits requires minimisation of costs and proper cost allocation. This may be done based on in-depth analysis and understanding of all costs incurred, which enables the reduction of certain costs (without affecting the quality of the products or services offered) and an increase in the profitability of certain products or services.

The revenue streams element describes the different sources of income that an enterprise receives in exchange for the services or products it offers to each of its customer segments. It addresses the question: How much income can be generated? A thorough consideration of the revenue streams element is important, because this helps entrepreneurs to better understand the nature of individual income streams and to predict their cyclicity. It further measures an enterprise's ability to monetize value offered to customers and provides increased financial stability for business development (Remenova *et al.*, 2020).

The cost structure and revenue streams elements provide support to entrepreneurs when assessing the operational and financial sustainability and scalability of their business activity, but without providing any financial projections.

Assessing Available Financial Tools

Running an enterprise requires a calculation of costs and financial skills (Tajpour *et al.*, 2021). Finding a tool that supports this process is not a simple task. Tools available online are either commercial solutions or they do not include all the necessary elements. Some are too simple, others unduly complicated. Some include online templates, while others are narrative descriptions of the process or an outline of the steps one needs to go through to compile a profit and loss statement. This section discusses some tools available online.

The U.S. Small Business Administration provides online instructions aimed at potential entrepreneurs, supporting them in writing a business plan that includes most of the BMC elements and providing a template with steps that entrepreneurs can follow to calculate their start-up costs (Small Business Administration, 2022). Another website, Small Business Trends (Small Business Trends, 2022) provides an online calculator and instructions for potential entrepreneurs to calculate their start-up costs.

Although Tim Berry (2012) does not provide a specific financial calculator, they provide a rather complicated step-by-step description of how start-up costs ought to be calculated. A valuable feature is the provision of numerous useful definitions of key terms, such as: 'Startup costs are expenses incurred before the business is running. These are the bills and expenses you will need to cover leading up to the launch of your business.'

Zoho Finance (2022) provide several definitions and downloadable Excel sheets that may be used to calculate fixed costs and variable costs.

Lehman and Bidmon (2021) admit that 'validating the profit formula of a business idea is a difficult task for students and entrepreneurs alike' (p.i). Their model, which they call 'a reduced P&L on a beer coaster' (p.iii), is composed of 11 lines, together with a column for comments. Figures may be inputted either 'top-down' (*i.e.* working from sales to profits), or 'bottom-up' (*i.e.* working from profits to sales). Numbers are inputted manually into only one column every month. This is a rather simple model with several shortcomings, mainly because it is designed to be completed manually and provides space only for numbers relating to one month, with no indication of when the break-even point would be achieved.

Financial Calculator as a Microlearning Tool

One of the main lines of criticism directed towards Osterwalder and Pigneur's (2010) BMC is the absence of quantification related to the financial viability of the enterprise concerned. It is, however, to be admitted, that the BMC refers 'in the first instance to a conceptual, rather than a financial, model of a business' (Teece, 2010, p. 173). Missing out on the numbers could, nonetheless, prove to be a critical mistake. Relevant questions that ought to be addressed include:

- Once the target markets have been identified under customer segments, how many people are there in each of the target markets?
- How many units (of the product or service) can you expect to sell in one year?

- How much does it cost to acquire a customer?
- If the enterprise is a new start-up, when can it expect to achieve a break-even point and, subsequently, profitability?
- Can variable costs be tweaked to either increase profitability or achieve a break-even point earlier than initially expected?

This process is not easy, particularly for those persons with limited financial education or with poor financial literacy. The creation of the proposed online financial calculator aims to simplify and extend this process.

Based on the needs of the entrepreneurs, their engagement in doing work and their lack of time to spend on a long training course, the ProBM2 project developed a financial calculator that fulfils the conditions of being a microlearning tool (Taylor & Hung, 2022). Microlearning incorporates:

- focus on the specific educational needs of the learner and it leads to the achievement of a specific goal, providing one training unit per issue. The financial calculator focuses on a specific competency, that is, how to estimate costs in order for an investment to be effective,
- in addition to educational content, elements that allow learners or entrepreneurs to practice and check the content discussed in a given training unit (*e.g.* tests, quizzes, self-reflection). The proposed tool is presented in the form of a template in which learners or entrepreneurs may input the numbers of different cost categories in the investment planning process. If they have problems with inputting the appropriate numbers, they may analyse examples that are available on the website,
- brevity (depending on the source, the exercise should take a maximum of seven (COL, 2021), eight (Omer, 2017) or 15 (Buchem & Hamelmann, 2010) minutes. The time used to input the data into the financial calculator can be brief. The learner or entrepreneur may complete the template quickly to check whether their projections are acceptable or whether there is a need to improve them. This process is expected not to take longer than 15 minutes,
- the educational content in an interesting multimedia or digital form (*e.g.* video, podcast, animation, game, infographic, interactive document or presentation). The proposed tool is interactive, which means that learners or entrepreneurs may complete the template as many times as they wish or as often as is necessary,
- technologies and applications available on mobile devices. The financial calculator is available from the ProBM2 project website. It is possible to work with the tool through mobile phones, therefore, users may apply the calculator at any place and at any time,
- access to the presented content at a time that is convenient for the learner or entrepreneur,
- a design that allows for its use at different stages of the training cycle, *i.e.* as an independent short training course or as part of a larger training programme. The financial calculator may be added to the modules related to the revenue streams and cost structure of the BMC. On the other hand, users may apply the financial calculator independently, without any need to access the modules (Buchem & Hamelmann, 2010; Hug, 2006; COL, 2021; Omer, 2017).

The fact that the financial calculator considered as a microlearning tool is available online is relevant and in line with the views of Lin and Sekiguchi (2020), who conducted a systematic literature review on journal articles from the domains of both e-learning and entrepreneurship/management. They claim that ‘the topic of e-learning in entrepreneurship education is facing urgency in practice and scarcity in research’ (p. 40). Kossen and Ooi (2021) and Nur Fitria (2022) draw attention to the fact that when designing training in the form of microlearning, several issues should be considered (see Table 1).

Like any other educational method, microlearning has its advantages and disadvantages (COL, 2021; Pappas, 2016; Shail, 2019). Training in the form of microlearning allows for time-saving and cost-reduction. These types of courses are quick to prepare and often use freely available technology and social media platforms which enable content sharing and may be displayed on various devices, anywhere and anytime. This provides users with the opportunity to take control of what they learn and when they access the available material. Thanks to the simple and concise presentation of the financial calculator, microlearning allows the cognitive load to be reduced and the content provided to be as-

simulated more effectively. In addition, thanks to the digital technologies used, it provides an opportunity to ask questions, discuss the content presented, and receive feedback, mainly because the synchronous and asynchronous communication channels generally used in microlearning (*e.g.* discussion fora, instant messaging, blogs, e-mail) provide learners with an opportunity to contact other course participants, teachers, and mentors. In the case of the financial calculator, the feedback is not direct, which means that there are no fora or chat functions, but users may simulate the calculations as many times as they wish. The level of net present value (NPV), the internal rate of return (IRR), and also the payback period will reveal whether the estimations are correct.

Table 1. Issues to be considered when designing microlearning

Issues to be considered	Linkage to the financial calculator
Where will the microlearning be stored and from where (how?) will it be made available?	The financial calculator is publicly available directly from the ProBM2 project website. ProBM2 project: (https://probm2.cti.ugal.ro/site/en/financial-calculator/).
How will participants have access to it?	Through the ProBM2 project website.
How will participants find out about it?	The financial calculator is available to everyone. It is disseminated through social media platforms and via face-to-face meetings and training sessions in Poland, Malta, Romania, Greece, Italy, Portugal, and Switzerland.
How long will the content be available for?	The ProBM2 project sustainability is five years, therefore, the financial calculator will be available until at least 31 March 2027. However, because there is no similar tool available, the project coordinator will ensure that the project website is maintained and left available for longer.

Source: own elaboration.

The fact that microlearning responds to the specific training needs of learners also gives them a greater sense of fulfilment and satisfaction with the results achieved and the learning outcomes.

However, despite the many advantages, there are some disadvantages. First of all, this form of training is ideal for simple issues but unsuitable for complex and extensive educational content. Microlearning uses various digital technologies, which for some learners and teachers may be associated with problems resulting from a lack of knowledge or their ability to use or access them. Microlearning gives learners a great amount of control over the training process (it is the learner who decides when and where to learn), but if the learner lacks motivation, self-discipline, and time management skills, the effectiveness of this training is at risk (Kohnke, 2023). Microlearning generally constitutes a part of a larger educational programme. Individual educational units refer to specific bits of knowledge transferred as part of a more extensive training programme – a learner may have problems identifying links between individual educational units and achieving the overarching goal of education provided for the entire course (Nastase & Popescu, 2023). The only disadvantage of using the proposed financial calculator may be the fact that the users may not fully understand the dependencies between different numbers. They could attempt to estimate the investments for the business, but there are no further explanations related to whether or why the estimations are correct or not as the tool does not provide any form of judgement.

RESEARCH METHODOLOGY

The main objective of the ProBM2 project was to improve entrepreneurs' skills and knowledge about business models, providing several online modules that include the financial calculator. The knowledge and skills acquired by the target groups (*i.e.* educators, trainers, and entrepreneurs) were expected to directly contribute to the design and practical use of a good business model.

This study adopted both a conceptual analysis approach together with a statistical evaluation of the proposed financial calculator by 58 entrepreneurs from start-ups in Poland. The authors decided to apply such a method due to the following reasons:

- Clarifying concepts: conceptual analysis helped to clarify the meaning of concepts used in the online financial calculator. Several concepts were initially not very clear for the respondents, therefore, there was a need to clarify them.
- Rigorous examination: conceptual analysis involves a systematic and rigorous examination of concepts. It entails the breaking down of complex concepts into their constituent parts, exploring relationships, and identifying underlying assumptions. This analytical process helped researchers achieve a deeper understanding of the concepts incorporated in the proposed tool.
- Critical evaluation: conceptual analysis allowed for the critical evaluation of concepts related to the financial calculator. It enabled the authors to assess the strengths, limitations, and applicability of existing tools. Through this evaluation, the authors were able to identify gaps and weaknesses in the developed financial calculator, stimulating further research and theoretical advancements.

The selected entrepreneurs came from different regions of Poland, from micro or small enterprises, and they considered the estimation of investments in their enterprise as crucial for their future existence. The enterprises represented three kinds of sectors:

- tourism sector,
- education and training sector,
- food sector.

The authors decided to choose these three different sectors to check whether the use of the financial calculator is equally important for all these sectors. The number of enterprises represented for each sector is presented in Figure 1.

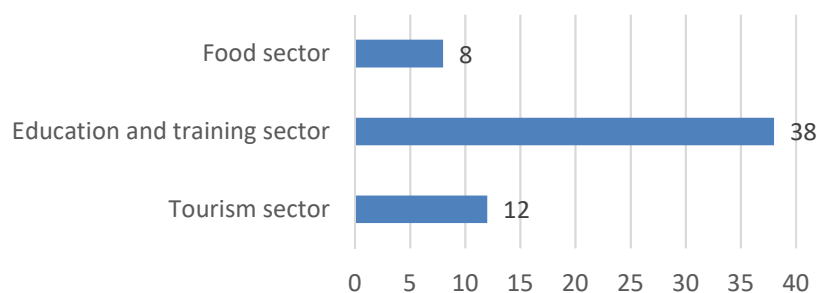


Figure 1. Number of enterprises from different sectors participating in the research

Source: own elaboration.

Respondents tested the online financial calculator and assessed its functionality, listing what they considered to be the most interesting aspects.

The complete research methodology included four steps:

- Step 1: The literature review on business model elements, available financial tools, microlearning and financial literacy that formed the basis for the conceptual analysis provided in this article;
- Step 2: The creation of the financial calculator;
- Step 3: The first and second assessments of the financial calculator as an element of the module 'cost structure' were conducted by educators, students, and entrepreneurs in seven countries (Poland, Malta, Greece, Italy, Romania, Portugal, and Switzerland);
- Step 4: The third testing of the financial calculator was conducted in Poland during the sustainability phase of the project.

In Step 3 and Step 4, the authors used a semi-qualitative questionnaire in which they included questions related to the usefulness of the financial calculator. The semi-qualitative questionnaire method was used as the number of enterprises was not so high, so the authors had the opportunity to obtain the responses with the use of the face-to-face form. In step 4, to confirm the correctness of the qualitative results, the analytic hierarchy process (AHP) method (quantitative analysis) was used to show the hierarchy of the most important and interesting elements of the financial calculator, *i.e.* the elements that were especially appreciated by the respondents. This article describes the results of Step 4.

RESULTS AND DISCUSSION

Due to shortcomings perceived in each of the calculation tools surveyed, the ProBM2 project developed a simple online tool (see Figure 2) that incorporates the following aspects:

- the estimation of investment costs,
- the identification of core risks underlying business activity,
- the identification of fixed costs (per year),
- the identification of variable costs (per service),
- the calculation of the Break-Even Point (BEP), and
- financial forecasting including an estimation of the payback period over several years (the calculation of the Net Present Value or NPV, Internal rate of return or IRR).

The figure displays two screenshots of a financial calculator tool. The top screenshot shows the template interface with empty input fields. The bottom screenshot shows the tool with numerical values entered, resulting in calculated values for NPV, IRR, and Payback period.

Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Year 4 - 2024	Year 5 - 2025	Year 6 - 2026	Year 7 - 2027
FC=Fixed costs	1,620,000.00	1,620,000.00	1,620,000.00	1,620,000.00	1,620,000.00	1,620,000.00	1,620,000.00
VC=Variable costs	7,000.00	7,000.00	7,000.00	7,000.00	7,000.00	7,000.00	7,000.00
AC=Average clients per year	547.50	547.50	547.50	547.50	547.50	547.50	547.50
P=Price	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
R=Revenues	8,212,500.00	8,212,500.00	8,212,500.00	8,212,500.00	8,212,500.00	8,212,500.00	8,212,500.00
TC=Total costs	5,452,500.00	5,452,500.00	5,452,500.00	5,452,500.00	5,452,500.00	5,452,500.00	5,452,500.00
PF=Profit	2,760,000.00	2,760,000.00	2,760,000.00	2,760,000.00	2,760,000.00	2,760,000.00	2,760,000.00

Discount rate: 4.00 % NPV - Net Present Value: 4,215,670.89 IRR - Internal Rate of Revenue: 12.63 % Payback period: 4.48 years, 1,634 days

Figure 2. The template and an example of the financial calculations using the financial calculator tool
Source: own elaboration based on ProBM2.

There are many advantages to using an online financial calculator, because there is a need for the calculation of the net present value (NPV), internal rate of return (IRR), or payback period. Using regular mathematics may create difficulties for learners or entrepreneurs, because the calculations could prove to be rather complicated. On the other hand, the online financial calculator provides the following advantages:

- It allows users to input the numbers and the results appear automatically.
- It is possible to change the numbers inputted, if required, and the results change immediately.
- It is not necessary to be familiar with advanced mathematics or to be very skilled in finance to be able to calculate these numbers.

The proposed online financial calculator allows users to make detailed calculations that will indicate when the enterprise is likely to achieve a break-even point, when it is expected to be profitable, and what the payback period will be, allowing for a span of up to eight years.

The online financial calculator allows for the tweaking of the figures inputted to, for example, visualize whether lower operating costs could be achieved to reach the break-even point earlier than expected. Lower operating costs could be achieved mainly by:

- Reviewing variable costs – these are costs that are not fixed but are volume related, dependent on the amount of goods or services produced or delivered. They are directly related to the volume of sales, such as the cost of raw materials (which depends on the amount required), packaging and utilities.
- Economies of scale – the more goods or services that are produced or delivered, the more the cost per unit would decrease.

Clearly defining the target market (as part of the customer segments element of the BMC) and quantifying the number of potential customers for each product or service produced would facilitate the quantification of the expected number of goods or services to be sold.

Although Step 3 (performed between June and October 2021) is not described in this article, it is worth underlining that the idea of the financial calculator was assessed positively (Walaszczyk, 2022). The elements of the calculator were rated as adequate and excellent for practical use.

Out of the 58 entrepreneurs from start-ups (in Poland) who tested the online calculator, 78% found this tool to be highly engaging, because financial competency and skill are extremely important, especially for entrepreneurs and for the continuity of their enterprise. What the entrepreneurs liked the most was the simple and comprehensible language of the tool. They were able to calculate different aspects related to the potential investments at different stages of the enterprise's business life.

During the testing phase, all respondents indicated what they considered to be the top three most interesting aspects of the proposed online calculator (see Table 2).

Table 2. Relative frequency of times the elements are ranked in the top 3

Elements	Frequency (number of times)	Relative Frequency (%)
The estimation of investment costs	43	25
The identification of core risks underlying business activity	32	18
The identification of fixed costs (per year)	5	3
The identification of variable costs (per service)	13	7
The calculation of the Break-Even Point (BEP)	29	17
Financial forecasting including an estimation of the pay-back period over several years (the calculation of the Net Present Value or NPV, Internal rate of return or IRR)	52	30

Source: own elaboration.

The research shows that the most important function of the online calculator is to forecast the payback period over several years. Participants were able to easily calculate the NPV and the IRR. It is very difficult to calculate these values, but they are very important for the business establishment and business continuity if an entrepreneur does not have a financial background. On the other hand, participants stated that even if it is possible to find the mathematical formulae on the Internet, these are often very complicated and, therefore, cannot easily be used to calculate these values.

The second position belonged to the estimation of investment costs. Participants were satisfied to be able to include these figures, and they received the results immediately. This allowed them to assess whether the business is profitable or not. Users could conduct simulations for their projected future business and assess whether the values were correct or whether they needed to be changed. The least interesting aspect seemed to be the calculation of the fixed costs. This may seem rather obvious, because entrepreneurs generally know what the fixed costs of the company are, so this is not particularly difficult. This aspect was included in the research, because it is one of the elements that is required for the financial calculations.

The results from Table 2 were confirmed through the use of the AHP method, which is adequate for the hierarchisation of different elements (see Table 3).

The results showed that the quality of the tool is very good. The tool was considered user-friendly, the content and the methodology were found to be useful and comprehensive and the materials pro-

vided were well-targeted to address entrepreneurs who are interested in the topic of business models, thereby achieving their training needs. Most of the participants stated that the materials developed were good or excellent, they were effective in supporting end users during the learning process and they were adequate to support further education on business model application. Moreover, the ease of use and the comprehensiveness of the training material were appreciated. The online tool received very positive evaluations, especially regarding its usability and the organisation of the training materials.

Table 3. Values of the weight of each criterion with the use of the AHP method

Normalised matrix	K1	K2	K3	K4	K5	K6	Average value
The estimation of investment costs	0.330	0.167	0.529	0.290	0.273	0.514	0.318
The identification of fixed costs (per year)	0.066	0.083	0.059	0.032	0.091	0.385	0.066
The calculation of the Break-Even Point (BEP)	0.110	0.167	0.176	0.290	0.273	0.026	0.203
The identification of variable costs (per service)	0.165	0.333	0.059	0.097	0.091	0.043	0.149
The identification of core risks underlying business activity	0.330	0.250	0.176	0.290	0.273	0.032	0.264
Financial forecasting including an estimation of the payback period over a	0.082	0.028	0.882	0.290	1.091	0.128	0.475
Value of the weight of each criterion	0,318	0.066	0.203	0.149	0.264	0,475	–

Source: own elaboration.

The positive results obtained on the potential use of the financial calculator showed that it can be a useful tool for entrepreneurs as the owners of enterprises, but also for managers and students. It may provide entrepreneurs with benefits in the following areas:

- *Financial projections*: Entrepreneurs can use the online financial calculator to create accurate financial projections for their investment plans. By inputting relevant data, such as projected revenue, expenses, growth rates, and timelines, they can obtain comprehensive forecasts of their investments' financial performance.
- *Risk assessment*: financial calculators can assist entrepreneurs in assessing the risk associated with their investments. They can calculate metrics such as the NPV, IRR, and payback period. These calculations provide insights into the profitability, time value of money, and liquidity of the investment, aiding entrepreneurs in evaluating the associated risks and making risk-adjusted investment decisions.
- *Break-even analysis*: Entrepreneurs can utilize online financial calculators to perform break-even analysis. By inputting fixed costs, variable costs, and expected unit prices, they can determine the number of units or sales revenue needed to cover their costs and reach the break-even point. This analysis helps entrepreneurs set realistic sales targets and pricing strategies.
- *Capital budgeting*: financial calculators assist entrepreneurs in evaluating the feasibility of capital investments. By considering factors such as initial investment, cash inflows, cash outflows, and the project's lifespan, entrepreneurs can calculate metrics such as NPV, IRR, and payback period.

Overall, online financial calculators provide entrepreneurs with valuable tools for analysing, evaluating, and planning their investments. By leveraging these calculators, entrepreneurs can make informed financial decisions, assess risks, and optimize their investment strategies for better outcomes.

CONCLUSIONS

Lehman and Bidmon (2021) claim in their conclusion that they conceive 'entrepreneurship to be the ability to turn financially valuable ideas into action' and that 'the business model is at the heart of this process' as 'it describes the process of value creation, delivery and capture' (p.vii). Their solution consists of the development of a simple template that fits onto the back of a beer coaster and may lead users towards a better understanding of the financial viability of their ideas (Tajpour, 2023).

This article concludes that an online financial calculator ought to be attached to the BMC to supplement the information inputted in the cost structure and revenue streams elements. Compiling fi-

financial projections is an important part of any business model as the BMC on its own does not provide information related to profitability, sustainability, scalability, or to the break-even point.

Financial projections will provide new insights which, together with the information inputted on the BMC, will enable the enterprise to achieve one of its primary objectives, namely that of achieving economic viability. Undoubtedly serious financial projections lead towards a more realistic BMC. The online financial calculator is proposed as a microlearning tool which makes it user-friendly and adds to its ease of use. Microlearning is a teaching method that is part of e-learning, where educational content is presented in the form of short, concise, simple, and absorbing training units (Pawlicka, 2021; COL, 2021; Hug, 2006). Microlearning is an important component of lifelong learning and a training solution often used in the workplace as it constitutes a supplement or an alternative to more time-consuming and formalised learning, such as a classroom or online training (Buchem & Hamelmann, 2010). The proposed financial calculator is a simple tool and it is presented in a concise form. Its aim is mainly to be used online, but if an educator wishes to use it in a classroom, the financial calculator may easily be utilised as a good example for a classroom-based exercise.

However, we can observe the research limitations of the use of a financial calculator. The authors focused only on selected elements that are important for investment. If there was a need to use a calculator for more complex calculations, it might not fulfil its task as it is designed for quite simple calculations.

Future studies could focus on testing the financial calculator with real-life investment activities and verifying its usefulness and assessing how helpful it is for establishing the calculations. An additional area for future research could consist of the implementation of the digital learning approach for entrepreneurship and business models proposed in this article in educational settings and evaluating its impact through student feedback and empirical research.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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