The importance of innovation in terms of a sustainable entrepreneurship in environment

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Abstract. The aim of this paper is to define the importance of innovation in terms of a sustainable entrepreneurship in environment. The framework is based on a typology of sustainable entrepreneurship, and the application of an entrepreneurial approach in meeting societal goals and changing market contexts, and is related to sustainability innovation. The framework provides guidance to managers on how to implement sustainability innovations and strive for sustainable business.

1. Introduction
All companies that want to survive and stay in the market must focus on business sustainability in the market environment. In this dynamically evolving environment, influenced not only by the pandemic, concentrating on innovative entrepreneurship and continuous improvement is one way to achieve this. The focus on sustainable business is conceived as one of the company's strategic goals, which leads to the setting and allocation of resources and the financial sustainability of socio-economic sustainability, including a positive impact on the business environment.

The aim of this paper is to define the importance of innovation in terms of sustainable entrepreneurship in the environment.

Based on a study of the literature and research, a hypothesis was established: ceteris paribus, 80% of customers buy products with a sustainable environment background.

It is necessary to monitor the requirements and focus of customers, as they are the only source of income for the company, and start caring more about the environment and, therefore, sustainable business. For this reason, the paper focuses on the aspect of the customer's voice in terms of innovative activities for the sustainability of the business environment and the products they buy and choose. Therefore, research was conducted among 300 customers in the age group of 18-65 years focused on their approach to the features of sustainable business. From these features, it is possible to deduce elements for innovation activities in the company, where the authors performed ANOVA of the voice of customers and selected the eight most numerous requirements, which tested 150 innovative companies and evaluated the behavior of the top management to apply innovative activities towards business sustainability in the business environment.
2. Literature review

The principles of innovation theory are often attached to economic activity expansion and related to novelty modernity. However, the conceptual cores for innovation mapping are procured essentially from disciplines such as management and economics [1]. The management procedure to innovation indicates how innovation can develop a company's market position and produce innovative conceptions. In the complement, economic-based procedures examine the factors that encourage organizations to innovate, secondly the macroeconomic effects of innovation on the industry, the market, or the economy. Innovation in a broad perception is defined as each change consisting of the acquisition of acquired knowledge. However, in a narrow sense, it represents a change in production methods and products (possibly in the organization of the production process) based on new or previously used knowledge, [2]. The fundamental links of the deduction are [3]:

- innovations and innovative processes,
- innovative entrepreneur and the role of new companies in the transfer,
- and commercialization of technology,
- creative destruction and it's economic, structural and social effects,
- regularity of technological and structural changes over time.

Combining the above elements complemented by the creativity of employees and company teams forms the foundation for a dynamic knowledge economy, based on the capability to take advantage of the opportunities generated by each company's dynamic environment. In standard terms, the entrepreneur is considered to be the driving force behind innovative change [4].

In light of these statements, an innovative entrepreneur is the vector of the change mechanism, an individual competent in proposing new combinations, i.e., implementing innovative undertakings (the so-called tornado of creative destruction), and most importantly, convert them into new products, technologies, or organizational solutions. The function constituting an entrepreneur is introducing innovations, regardless of other activities related to running a business.

Many factors condition the innovative activity of entrepreneurs [5]. It is impossible not to mention the factors of the external environment (especially customer market, suppliers, labor market, competition) and further (formal, political, legal, economic conditions) or socio-cultural). Moreover, innovation is based on an education process that uses many origins and requires constant problem-solving. The evaluation of innovation theory enrolls four dimensions of innovation that can convert into a source of recommendations in measurement: knowledge, novelty value, implementation, and value creation. Nine innovation codes are divided into rationalization, qualitative innovation, and technological breakthrough [6], other definition point out to the introduction of a new or significantly improved product and the use of a new or significantly improved process in the production company's internal environment [7]. This theory completed by evolving them into practical use within the designed and implemented innovation management strategy [8].

The concept of sustainable entrepreneurship is currently at the forefront of many innovative theories, which associates with discovering, creating, and exploiting entrepreneurial possibilities that commit to sustainability by generating social and environmental gains for others in society [9]. Sustainable entrepreneurship is recognized as a theory that attempts to restore the economic, social, and environmental aspects. Therefore, it is required to address the company's competitiveness, taking into account the environmental and socio-economic aspects of the business. Economic aspects of entrepreneurship should be pursued in the circular economy, diversity of the labor market, and sustainable communities.

It can also be defined as the teleological process intending to achieve sustainable development by discovering, evaluating, exploiting opportunities, and creating value that produces economic prosperity, social cohesion, and environmental protection [10]. Achieving sustainability at the global level through a strategic approach is a long-term perspective and combines different development models [11].
Sustainable entrepreneurship is related to all innovativeness concerning changes in technology, organizational structure, and management of a plant, enterprise, or the country's economy. Researches show that sustainability is an operator of innovation, changing customer dynamics and shifting the culture in the workplace. At the same time, companies across the entrepreneurship spectrum are starting to take sustainability into account more often. Due to embrace sustainability, companies need to figure out how to meet and exceed growing customer expectations while demonstrating that sustainability can be profitable. Many innovative companies use sustainability as their competitive advantage. In about one-third of companies, sustainability is the impulse for all research and development (37%) and development of new products (33%) [12].

3. Methodology and data
The research was carried out through an online questionnaire survey (from January 2021 to April 2021), which involved 300 customers in 18 to 65 years. It focused on finding out the respondents' attitudes in the area of features related to sustainable business. Based on the features mentioned by the customers participating in the research, elements talking about innovative activities of companies were defined. The authors of this paper subsequently evaluated these requirements using ANOVA analysis, both in terms of customer's voice and implementation in the case of 150 innovative companies. Innovative character of company is understood as an enterprise implement one or more innovations during the observation period. Attention was paid to manufacturing companies, as in their environment, the results of innovation activities are best quantifiable. There is also a clear shift towards sustainability concepts. The monitored manufacturing companies were selected from a database of innovative enterprises generated through previous research concerning innovation activities.

At the same time, a hypothesis was established:

**H0**: Customers choose products with a sustainability entrepreneurship background.

ANOVA (Analysis of Variance) or analysis of variance is a standard statistical method. This method in economic applications allows to assess the influence of various factors on the economic process, to evaluate the effects of the measures taken and the like [13]. The basic idea of the analysis of variance distribution the total variance into partial variances belonging to the respective individual influences, according to which the empirical data are classified. Using this method, the variance between the results (individual data) can be analyze. This variance is caused, on the one hand, by the clarified sources of variability (known sources of variability, we can also call them factors) and other influences, which are considered to be unknown sources of variability (so-called residual variance or error).

4. Results
Based on a questionnaire survey and answers from 300 customers, 16 essential elements were defined within the sustainability entrepreneurship background, namely renewable resources, resource allocation, logistics, recyclability, streamlining processes, automation, electronization, energy-saving, waste minimization, packaging materials, local suppliers, local community support, corporate image, product portfolio, employee training, and innovation. Based on the importance, the authors monitored the quality of execution in the Czech Republic, see table 1.
The results of research in this area provide an overview of the perception of individual elements by customers. It was found that customers rate recyclability, logistics, corporate image, energy saving. If it is an average evaluation of the quality of implementation of these elements according to customers' point of view, the recyclability is best fulfilled. In general, however, this performance was evaluated in the range of 3 to 3.1. Customers ranked resource allocation and waste minimization on the lowest rungs. This result is visible even in the standard deviation when these elements are found preferably in the zones of higher performance (excluding education), see figure 1.

Table 1. Customer voice.

| Element                      | Quality of implementation | Importance |
|------------------------------|---------------------------|------------|
| recyclability                | 3.2                       | 4.0        |
| logistics                    | 3.0                       | 3.9        |
| corporate image              | 3.0                       | 3.9        |
| energy saving                | 3.0                       | 3.8        |
| product portfolio            | 3.0                       | 3.6        |
| local suppliers              | 2.3                       | 3.4        |
| packaging materials          | 2.6                       | 3.3        |
| local community support      | 3.4                       | 3.2        |
| employee education           | 3.3                       | 3.2        |
| innovation                   | 2.9                       | 3.2        |
| streamlining processes       | 3.3                       | 3.1        |
| automation                   | 2.8                       | 2.9        |
| renewable resources          | 2.3                       | 2.8        |
| electronization              | 2.9                       | 2.8        |
| resource allocation          | 2.8                       | 2.6        |
| waste minimization           | 3.1                       | 2.5        |
The same factors were also analyzed in the case of evaluation by innovative companies, where managers or owners of 150 innovative companies were interviewed, see table 2. In this case, the innovative character means that the enterprise introduces one or more innovations during the reference period. The focus was on manufacturing enterprises selected from the innovation database authors generated during previous research in this area.

**Table 2. A point of view of innovative companies.**

| Factor                      | Quality of implementation | Importance |
|-----------------------------|---------------------------|------------|
| employee education          | 3.2                       | 3.8        |
| local community support     | 2.7                       | 3.7        |
| corporate image             | 2.5                       | 3.6        |
| recyclability               | 2.7                       | 3.5        |
| local suppliers             | 2.8                       | 3.4        |
| waste minimization          | 3.1                       | 3.2        |
| innovations                 | 2.5                       | 3.1        |
| packaging materials         | 2.9                       | 3.1        |
| energy saving               | 2.7                       | 3.1        |
| renewable resources         | 2.9                       | 3.1        |
| product portfolio           | 2.8                       | 2.9        |
| logistics                   | 2.4                       | 2.9        |
| resource allocation         | 2.8                       | 2.8        |
| electronization             | 2.7                       | 2.8        |
| automation                  | 2.7                       | 2.8        |
| streamlining processes      | 2.4                       | 2.7        |
In the case of the average evaluation of the analyzed elements from the point of view of innovative companies, their order is entirely different. Here, particular attention is paid to employee education, local community support, corporate image, recyclability, and local suppliers. However, the evaluation in terms of the implementation of these elements ranges from 2.5 to 3.2. In the case of employee training, it is, therefore, a high rating. There is visible room for improvement in other cases, which is also indicated by the analysis of variances, see figure 2.

![Resource allocation](image1.png)

**Figure 2.** A point of view of innovative companies.

Due to the omission or confirmation of the established initial hypothesis, an ANOVA analysis was performed, see table 3.

| Source of variation | SS   | MS   | F     | P       |
|---------------------|------|------|-------|---------|
| Between             | 22,09| 22,09| 15,8964| 7.96E-05|
| Within              | 553,07| 1,389623|       |         |
| **Total**           | 575,16|      |       |         |

Hypothesis 0 (H0) applies; customers focus on quality goods leading to a sustainable environment for future generations.

5. Discussion

The point of view of customers and companies differs in many ways. The first group analysed perceives it as the most critical element related to the immediate increase in consensus quality connected with the excellent feeling stemming from sustainability background. Recycling is perceived here as a current trend; the emphasis on logistics and energy savings helps reduce emissions; its reputation is also essential, whether the environment perceives it as a sustainable strategy. In the case of companies, special attention is paid to improving the qualifications of employees, as only qualified employees can come up with innovative ideas that will be transferred to the sustainability of the business. In the business environment, there is also a clear shift to local solutions, both by selecting local suppliers who mediate the required quality in the required time (while reducing logistics) but also the responsibility of the company (working with a local group). At the same time, the managers in the analysed companies realize that enabling the training of employees will lead to the strengthening of the overall culture of the organization, the reduction of turnover, and thus the creation of loyalty, also necessary in the case of
sustainability. Another aspect is the support of the local community, where the earned funds are returned to local society, and the imaginary round closes. Interestingly, although customers’ rate performance in the Czech Republic wastes minimization very high, they assigned it the lowest weight. However, companies have already ranked 6th out of the original 16 elements (the evaluation of performance is the same here). This can mean moving customers to the more detailed features of sustainable entrepreneurship and the perception of waste minimization as necessary for sustainability.

Companies perceive streamlining processes as the least important (simultaneously with a low value of element implementation). However, focusing on this part of innovation and sustainability itself would make it possible to improve the quality of a sustainable strategy on a global scale, as streamlining processes affect all the features analysed and evaluated.

However, the analysis also revealed room for improvement. It has been confirmed that customers directly require products related to sustainability background. In this respect, they will not be discouraged by the higher price associated with purchasing these goods. Consumer expectations about sustainability are changing brand-customer dynamics immensely rapidly. With their corporate philosophy and communication through corporate image, companies could direct customers to suitable products from a sustainable point of view. Paradoxically, although the public perceives automation and electrification as an essential part of sustainability, innovative companies in the manufacturing sector perceive these two aspects as less important and focus more on specific solutions in individual production areas.

6. Conclusions
The research focused on the need to monitor the requirements and focus of customers in the sustainability and innovative performance of the company, as customers are the source of business revenues. To embrace sustainability, businesses need to figure out how to meet and exceed growing customer expectations while demonstrating that sustainability can be profitable. Research has shown that sustainable development strategies are becoming the norm for both customers and innovative manufacturing companies and customers’ requirements. However, there is a split in assessing the importance of individual elements of sustainability in the case of both sides of the market. It can also be stated that innovations are closely connected with education, namely with sustainable entrepreneurship. The framework guides managers on what individual elements of sustainability to focus on to meet customer expectations and how to implement sustainability innovations and strive for sustainable business. The number of innovative companies limited the results. For future research, it would be appropriate to extend the focus to companies from other fields.

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