Measuring what Matters: A Critical Evaluation of Local Development Indicators

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Abstract Despite its recognised importance, the concept of local development continues to lack a precise definition. Traditionally dominated by economic growth paradigms, recent global challenges such as environmental degradation, social inequality, and resource depletion have spurred the need for a more sustainable approach to development. Sustainable development, encompassing environmental, social, and economic dimensions, has emerged as a key paradigm shift, emphasising the interconnectedness of these pillars. However, defining and measuring sustainable development presents various challenges, including those related to the interdisciplinary nature of indicators, methodological concerns, data reliability and availability, and the usefulness of results for policy purposes. The chapter explores the challenges in measuring local development in line with the idea of sustainable development and quality of life, using Slovenia as a case study. The current measurement system in Slovenia primarily relies on economic indicators, with a limited representation of environmental and social indicators. The study highlights the inadequacy of existing indicators in providing comprehensive and relevant information for policymaking, emphasising the need for a more holistic, multidimensional approach to measure and understand local development.

Keywords: • local development • measurement • municipalities • sustainable development • quality of life

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1 Introduction: local development

To understand local development, one must deal with its fundamental nature. What it is, what it is for, what it is intended to achieve and what it should be (Pike et al., 2006). However, the concept was recognised as vague long ago (Coffey & Polese, 1985: 85) and still is (Futo, 2019). It still needs an appropriate, precise, and tangible definition reflecting views on local development in a specific time and space.

Different kinds or types of local development exist (Pike et al., 2006: 39), and the term itself can mean different things to people at different times and different places (Todaro & Smith, 2003: 14). In each era, different theoretical and ideological frameworks emerge, accompanied by different definitions of development, theories of social change, driving forces of development, and specific manifestations of local and regional development (Pike et al., 2007: 1255). Perceptions of local development also vary geographically, from small villages in Africa to big metropolitan cities in Australia. Development is thus a clash of time and space with the idea of the future. Whether it is cities like Ljubljana, Antwerp, or Lisbon, small communities like Selnica ob Dravi in Slovenia, Tomaszow Lubelski in Poland or the car-free island of Unije in Croatia, each place has its own history and heritage, stories and other individual characteristics that influence development trajectories in the present and in the future.

Local development is closely related to the views on development in general. After all, local development is an essential part of the development of a country as a whole (Coffey & Polese, 1985: 85). Like development in general, local and regional development have historically been dominated by classical theories of development, modernisation in line with Western development and concerns such as income, productivity, growth and employment (e.g., Coffey & Polese, 1985: 85; Garofoli, 2002; Todaro & Smith, 2003: 14; Redclift, 1987: 15). As such, it has often been questioned as being overly economistic and too focused on economic growth. A development paradigm based on economic growth remained especially popular until the 1970s (Šimleša, 2003: 404), when it became obvious that development policies focused exclusively on economic growth and based on the exploitation of limited natural resources would soon cross the Earth's planetary boundaries. Paradoxically, perpetual economic growth has very little to do with people's quality of life after countries reach a certain level of economic development (Easterlin, 1974), even though common perceptions among people may differ.

One of the first warnings of the environmental challenges posed by resource depletion was often controversially perceived the *Limits to Growth* study in the 1970s (Meadows et al., 1972), as well as similar studies that followed in the future, including more recently (e.g., Steffen et al., 2015) which appealed to the world to change behaviour toward the planet (Klarin, 2018: 71). The changes in the environment are evident in climate change and increasingly frequent natural disasters. With the increasing awareness of existing social challenges, like poverty and inequality, environmental problems, and the

unsustainability of the current rate of consumption of natural resources (e.g., Steffen et al., 2015; Plut, 2022), forms of local development that prove to be more sustainable and durable in environmental, social, and economic terms have been sought (Pike et al., 2006: 114). The above challenges emphasise the urgent need for a new paradigm that considers economic, environmental and social dimensions of development. In this context, we have started to speak about sustainable development (Vintar Mally, 2009: 85-94; Shi et al., 2019: 1-2).

Sustainable development is difficult, even impossible, to define unambiguously as there are several different definitions that change over time. As sustainable development refers to a dynamic process rather than an endpoint, the challenge of defining it is somehow understandable (Dahl, 2018: 42). However, definitions are usually based on the general understanding that there are natural limits to growth and Earth's planetary boundaries. Sustainable development is most frequently defined by the definition provided in the Brundtland Commission Report as development that meets the needs of the current generation that lives on the planet without jeopardising future generations and their ability to fulfil their needs (World Commission on Environment and Development, 1987).

In recent years, sustainable development has become one of the most popular buzzwords on the world's political agenda (Bohringer & Jochem, 2007: 1), a holy grail for modern times (Bell & Morse, 2001: 292) and a key influencer of global, regional and local development (Pike et al., 2006: 113). In its development, the concept of sustainable development became popular as a concept based on three equal pillars: the environmental, the social and the economic pillars of sustainability, also called the *triple bottom line concept*, according to which the ideal of sustainable development is achieved when each of the pillars respects the interests of the other pillars (Klarin, 2018: 84). This view has been criticised by many. Sharpley (2000: 7) argues that development and sustainability could be in a juxtaposition in which both could have possible counterproductive effects. In that regard, a question about true sustainability arises. Shiva (2010: 240) points out that the common understanding of sustainable development is dangerous because it does not properly reflect environmental limits and the need for human activities to adapt to the sustainability of natural systems, which are basic prerequisites for developing all other areas. Above all, without the planet's basic environmental life support systems, there can be no economy or society (Levett, 1998: 295). Accordingly, the prerequisite of environmental sustainability has become a subject of debate on the concept of sustainable development and a fundamental framework for considering future economic and social development (e.g., Klarin, 2018: 70; Plut, 2022).

If we summarise the existing discussions on development, adapt them to the reality in the countries of the European Union and transfer the state-of-the-art ideas about development to the local level, we can make conclusions about what local development is or what it should be at a given time and space. Without an appropriate state-of-the-art definition,

we would remain lost in our efforts to determine the direction of future local (regional, national) development.

If economic development can be viewed as improving economic activity, environmental development as achieving a better quality of the environment and social development as achieving social characteristics that are desirable in a particular society, all in respect for one another and with the Earth's planetary boundaries in mind, then local development can be viewed as a set or combination of these actions at the local level, that together contribute to the overall quality of life.

We argue that achieving sustainable development and improving the overall quality of life is an elemental goal of local development in a given time and space. A broader, multidimensional understanding provides novel prospects for contemplating, grasping, realising, and measuring local development, specifically, what it should be in terms of both the present reality and future visions.

2 Measurement of development

An issue that cannot be measured will be difficult to improve (Bohringer & Jochem, 2007: 1).

Measurement serves for the evaluation of the current situation and the determination of future scenarios. It helps us to assess the results and effectiveness of various public policies and projects applied in the field (Frare et al., 2020). Ideally, the measurement of development supports the creation of policies that are necessary to achieve the desired direction of future development. However, measurement is not only about the assessment of results but also serves as a possible tool to provide early warnings (Pinter et al., 2018: 21). For this reason, studies on local and regional development are inevitably linked to questions of measurement of development (Mazur & Mazurek, 2020: 111; Mascarenhas et al., 2010: 647; Abreu et al., 2019: 1107).

The application of comparable indicators in the context of development assessment facilitates the practice of benchmarking, thereby permitting comparative analyses among municipalities. This, in turn, allows for comparison in time and space and, therefore, enables municipalities to assess their performance relative to others within broader regional, national or, in an ideal but seldom attainable scenario, an international context (Eckerberg & Mineur, 2003; Mascarenhas et al., 2010: 64). Such a comparative approach assists local authorities in identifying both strengths and weaknesses and assessing their potential for action (Mascarenhas et al., 2010: 647), which can enhance efficiency in pursuit of greater sustainability and quality of life (Frare et al., 2020: 1-2). Relative performance proves useful in cases where indicators lack scientifically established thresholds or critical values (Tanguay et al., 2010: 408). Consequently, it supports

recognising intra-regional asymmetries, thereby enabling relevant actors to create targeted policies aimed at mitigating these disparities.

3 Selected issues in measuring local development

One approach to measure progress towards (sustainable) local development is using sustainable development indicators (Bell & Morse, 2001: 292). In the past, in line with historical development trends, the Gross Domestic Product (GDP) has often served as a basic indicator to measure development (Pike et al., 2006: 114). GDP remains a central position within various development measurement approaches, such as the European Union's assessment criteria for determining a country's eligibility for funds from the European Union Cohesion Policy (European Commission, 2023). However, the mere use of the GDP indicator overlooks numerous important aspects of people's quality of life and a broader, holistic way of understanding development (Michalek & Zarnekow, 2012: 2; Levett, 1998: 297). Limitations of the GDP as a basic indicator for assessing progress, coupled with the growing need to take into account various economic, social, and environmental aspects of development, have encouraged the pursuit of alternative approaches to measuring it (Michalek & Zarnekow, 2012: 2-3). The evolution of the theory and practice of indicators to measure sustainable development have strengthened with Agenda 21, adopted at the Rio Earth Summit in 1992, which called for the development of indicators to support decision-making (Dahl, 1998: 42). Since then, numerous experts and institutions have been trying to develop measurement approaches that would meet those expectations (Pike et al., 2006: 30; Morgan, 2004: 884). Since the early 1990s, a multitude of indicator systems have been designed by various experts and institutions to provide comprehensive measures for evaluating development within the framework of sustainable development (Bohringer & Jochem, 2007; Frare et al., 2020). Sustainable development indicators have usually been aggregated into composite indexes and primarily used to compare the performance of specific territories. Most of the composite indexes, such as the Living Planet Index, Human Development Index, or Environmental Performance Index, are mainly suited for measuring development on a national level or regional level, while the measurement in accordance with the broader idea of development on the level of smaller territorial units was undertaken only by a few (Salvati & Carluci, 2014: 162). Consequently, not many composite indexes are specifically designed for the evaluation of the performance of smaller territorial units, such as municipalities. There are various (however not many) individual attempts, mostly within various state projects (e.g., Municipal Development Index in North Macedonia) or within various research projects (e.g., ECOXXI, RDI, ISMP), which have attempted to provide a framework for the measurement of local development in line with the idea of sustainable development. While the Municipal Development Index in North Macedonia has just been developed and may represent a promising attempt, other research projects have exhibited constraints in terms of time frame, geographical coverage comparability and practical use. Many of these endeavours concluded shortly after their introductions.

The lack of proper local development measures brings to the forefront various challenges regarding the evaluation of the effects of public policies, programmes, and projects applied in a particular territory, including those financed from various EU funds (Abreu et al., 2019: 1107; Michalek & Zarnekow, 2012: 2). Furthermore, this deficiency leaves us with limited insight into the quality of life within a specific geographic area and with limited insights into the influence of various dimensions of sustainable development on it. While the work in the field of developing appropriate indicators to measure local (sustainable) development is still progressing, a salient question arises: What are the main challenges related to the measurement of local development? We will attempt to answer the question with the help of analysis of various studies (e.g., Strezov et al., 2017; Frare et al., 2020; Bell & Morse, 2001) concerned with the construction of sustainable development indicators in the recent past. Analyses have shown that its creators must cope with numerous challenges, among which the most crucial ones are:

- Interdisciplinary approach in the process of conceptualisation and development of the indicators,
- Selection of relevant and meaningful indicators,
- Reliability and availability of data,
- Methodological issues,
- Making the index useful for policy purposes.

3.1 Interdisciplinary approach in the process of conceptualisation and development of the indicators

Various authors (e.g., Strezov et al., 2017: 243) emphasise the need for an interdisciplinary approach in the process of conceptualisation and development of indicators to measure local (sustainable) development. Such a process requires the involvement of experts from different relevant fields covering different dimensions of sustainable development, as there is a clear need for scientific consensus on the indicators used and their standardisation, at least within the territory of a specific country. At the same time, it is necessary to involve representatives of local authorities who directly influence the implementation of sustainable development in practice and have real experience in the field (e.g., Frare et al., 2020). After all, if one wants to make indicators truly effective, then one should include the views of stakeholders who are ultimately intended to design appropriate evidence-based policies (Bell & Morse, 2001). Various methods and techniques are available for the active involvement of stakeholders, ranging from surveys and interviews to the Delphi method. While the process may be challenging, the involvement of all necessary stakeholders, from experts to policymakers, may be very close to a requisite holism. According to Mulej and Kajzer (1998: 131), requisite holism exists when all necessary aspects are included and all necessary interdependencies are considered. This is particularly important with regard to broader issues such as local (sustainable) development.

3.2 Selection of relevant and meaningful indicators

Development indicators should relate to contemporary development trends and visions of the future that prevail in a particular time and space. In the global village, sustainable development has become one of the most popular and widely used buzzwords in today's debates about development (Bohringer & Jochem, 2007: 1) and has become a key influencing factor in local and regional development (Pike et al., 2006: 113). Indicators should be able to measure progress towards policy objectives or goals and progress towards sustainable development with the overall objective of improving the quality of life.

Ideally, the selection of indicators should enable an analysis of the importance of specific economic, social, and environmental factors that influence local development and the quality of life at the same time. One possibility would be to consider indicators that, among other things, already have a proven impact on the quality of life in the communities, such as health, social support, freedom to make life choices, the absence of corruption or quality of the environment (e.g., Helliwell et al., 2020; Helliwell et al., 2023). However, indicators that are intended to measure sustainable development are generally far from comprehensively representing sustainable development (Bohringer & Jochem, 2007: 5). This is particularly problematic for indicators that measure the social dimension of sustainable development, as environmental and economic indicators are more coherent within various studies than social indicators (e.g., Steurer & Hametner, 2013: 235). This may be partly due to the nature of sustainable development, whose very broad definition gives rise to multiple interpretations, which can lead to difficulties in developing and applying sustainable development indicators (Tanguay et al., 2010: 410). Additionally, that may be especially true for its social dimension, as there is a clear lack of consensus about what social development really is (Veenhoven, 2011), what social development means in a particular time and space, and what it means within a broader idea of sustainable development. As emphasised by Levett (1998), the struggle to find and use indicators of sustainable development is intimately bound up with the process of deciding what we mean by the term and what we should do about it.

As there is a lack of consensus on which indicators are the best possible ones, there is also a lack of consensus about the optimal number of indicators. The suggested numbers vary significantly. Studies dealing with measuring sustainable development at the local level use between 16 (e.g., Mascarenhas et al., 2010; Abreu et al., 2019) and 991 indicators (e.g., Michalek & Zarnekov, 2012). These findings are consistent with findings from similar research done by Tanguay, Rajaonson, Lefebvre, and Lanoie (2010: 410). Although there is quite a variation, some researchers (e.g., Bell & Morse, 2003: 38) propose a figure of around 20 indicators as a compromise between manageability and the depth of information. The selection of indicators may also be influenced by accessibility and availability of data, as further discussed in the section about reliability and availability of data.

3.3 Methodological concerns

When discussing the evolution of the methodology for measuring local development, it is essential to acknowledge the methodological challenges that inherently surface throughout this process. The (in)appropriate handling of these challenges can significantly impact the subsequent relevance of the findings, as one can prove almost anything by perhaps changing the methodology only subtly.

The selection of the (most) relevant variables, the choice of indicators for measuring these variables, and the application of appropriate weighting techniques can exert a substantial influence on the estimation of the level of local (sustainable) development (Salvati & Carlucci, 2014: 163). One of the main concerns is in the deliberation over whether to employ qualitative indicators, quantitative indicators, or a combination of both. Previous research has demonstrated that the utilisation of qualitative or quantitative indicators can offer multiple perspectives on the same issue. For instance, while noise pollution may fall within acceptable limits or be far under critical values, it may still be subjectively perceived as overly disruptive by a substantial portion or even by the majority of residents in a specific area. However, it is worth noting that quantitative indicators have inherent value and constitute a fundamental component of any endeavour to assess sustainability (Bell & Morse, 2001: 298-304).

3.4 Reliability and availability of data

The conceptualisation of appropriate and meaningful indicators would be much easier without various challenges about the reliability and availability of data required for measurement. Such challenges, more specifically about specific domains, costs of measurement, and time-related issues of collection and analysis of data, are emphasised in various studies (e.g., Abreu et al., 2019: 1110; Mazur & Mazurek, 2020: 127; Pires et al., 2014: 1). We can detect lack of available data about various elements of sustainable development, in particular those concerning social and environmental dimensions and quality of life. At the moment, indicators are mostly based on available data from state statistical offices, usually covering larger territorial units (e.g., territories of countries or regions) and rarely smaller territorial units (like municipalities), as it may be connected with additional costs. All 17 studies involved in the research of Tanguay, Rajaonson, Lefebvre, and Lanoie (2010: 410) acknowledge that the constraints of accessibility and availability of data are a recurring problem at a local level. This situation occasionally dictates the use of less than maximally efficient indicators to capture sustainable development at the local level. Constraints of accessibility may also affect the proportion of indicators (environmental, economic, social) in composite indexes.

3.5 Making the index useful for policy purposes

Various indicators developed in the past were forgotten soon after their introduction. We can only speculate whether questionable policy usefulness was one of the reasons for that. The measurement of local development makes sense if the results of the measurement can serve decision-makers for the design of further development, for the creation of public policies that have a real impact on the quality of life in the community and for the general public to be aware of the quality of economic, social, and environmental situation in their community.

4 Measuring local development in Slovenia

Slovenia is a European Union country, covering 20.273 km². It is one of the smallest countries in the European Union in terms of size. It is divided into two NUTS-2 regions, Eastern Slovenia and Western Slovenia, with obvious differences in development according to a measure used by the European Commission, GDP, which – as we argue – actually says very little about the overall progress and quality of life at the national, regional, or local context. At the local level, *the Municipal Development Coefficient* is used to measure municipalities' development levels.

Measurement of the development of municipalities in Slovenia is mandated and regulated by the Financing of Municipalities Act (2006), which states that measuring the development of municipalities is determined as a criterion for the co-financing of municipal investments with the aim of ensuring the same conditions for meeting the needs of citizens in accordance with the country's development goals. In accordance with the Financing of the Municipalities Act (2006), the development level of each municipality is calculated considering the following indicators:

- indicators of municipality development (gross added value per employee, per capita income tax base, number of jobs in the municipality in relation to the number of the working population);
- indicators of the disadvantage of municipalities (population ageing index, rate of registered unemployment on the territory of the municipality, labour force participation rate in the territory of the municipality);
- indicators of development opportunities (an indicator of provision of goods and services of public utility services, an indicator of equipment with cultural infrastructure, share of Natura 2000 areas on the territory of the municipality, indicator of population density of the municipality).

The question arises as to what extent the selected indicators represent contemporary development trends. Are the selected indicators the best way to measure local communities' development in line with a broader notion of development? To what extent does the existing Municipal Development Coefficient provide useful results for policy purposes to support evidence-based decision-making?

Based on the overview of the indicators included in the Municipal Development Coefficient in Slovenia, one can argue that most indicators used are, by their nature, economic indicators (e.g., gross value added per employee, per capita income tax, rate of registered unemployment). It reflects an understanding of the primary role of economic development as a main driver of progress while ignoring a broader idea of sustainable development and leaving behind various other aspects that also influence quality of life.

A minimal proportion of the indicators could be classified as those attempting to measure the environmental dimension of sustainable development (e.g., supply of goods and services of public utilities and the share of Natura 2000 areas on the territory of municipalities). The indicator about the Natura 2000 areas is particularly interesting. The proportion of Natura 2000 areas in Slovenia has not changed over the years, as it has been determined by various national directives. It is, therefore, an example of an indicator that clearly lacks informative value as it cannot effectively measure changes in environmental quality over time. After all, any of the indicators included in the calculation of the Municipal Development Coefficient do not tell us much about the quality of the environment at a given point in time, nor they tell us much about changes in the quality of the environment over time (e.g., levels and changes in pollution of the air, soil, and water).

Social development indicators are particularly problematic. This fact could be related to challenges in understanding social development in general, as it is often unclear what social development is. Social development indicators could be used to measure the direction of development in accordance with characteristics of society that are important in a given time and space. However, there is no consensus on this yet, as the field is understood by many to be fluid. Due to the absence of consensus about the definition of social development, statistical bureaus inadequately allocate attention to this multifaceted concept, resulting in a dearth of data essential for comprehensive analytical endeavours. These observations follow similar findings from abroad, where social development indicators are also highlighted as particularly problematic (e.g., Steurer & Hametner, 2013: 235), and various approaches to development indicators are affected by the lack of proper data (Mazur & Mazurek, 2020: 127). According to the approach used to measure the development of municipalities in Slovenia, the desired direction of social development seems to be only within culture, as the endowment of cultural infrastructure in municipalities (cultural monuments and objects of public cultural heritage) has been chosen as the only indicator to measure social development. However, social development is certainly more than that. Development on the local level is certainly influenced by many other dimensions of social development, which are overlooked by the current way of measuring the development levels of municipalities in Slovenia.

As we can see, the existing approach to measuring the development of municipalities in Slovenia is rather administrative and has no real use for policy purposes. Its goal is to

determine the amount of state co-financing for investments to ensure the same conditions for meeting citizens' needs in accordance with the country's development goals. One would expect that the indicators involved would thus reflect the country's development goals, as sustainable development and quality of life are among those. However, as we can observe, this may not be the case. It reflects an outdated understanding of the primary role of economic development as a main driver of progress while ignoring a broader idea of sustainable development and leaving behind various other aspects that also influence quality of life.

The Municipal Development Coefficient is not useful or useless for the actual understanding of development problems and policy issues and the identification of possible solutions to develop local communities in line with the idea of sustainable development. Indicators fail to represent contemporary development trends and may be categorised into indicators that do not provide useful data for policy purposes. Therefore, evidence-based decision-making at a local level in Slovenia is more an illusion than reality.

5 Conclusion

There is no single, universally accepted understanding of local development. A brief overview of the evolution of the concept and perception of development provides us with some key features. First, the idea of development changes over time. Second, the perception of development varies geographically. Third, the historically dominant focus on economic development has broadened to include a more holistic view of development that includes environmental and social aspects, especially in light of various concerns about the existing planetary boundaries. New concepts and approaches to measure local development, which attempt to incorporate awareness of achieving sustainable development and (higher) quality of life, are being sought. Inspired by previous research in the fields of local development, sustainable development, and quality of life, we are encouraged to present our perceptions about what local development is or what it should be at a given time and space. If economic development can be viewed as improving economic activity, environmental development as achieving a better quality of the environment and social development as achieving social characteristics that are desirable in a particular society, all in respect for one another and with the Earth’s planetary boundaries in mind, then local development can be viewed as a set or combination of these actions at the local level, that together contribute to the overall quality of life.

A broader, multidimensional understanding offers new perspectives for contemplating, grasping, realising, and measuring local development – what it should be in terms of both the present reality and future visions. Following the idea that an issue that cannot be clearly measured will be difficult to improve, we have highlighted the importance of measuring development, which serves to diagnose the situation, identify problems, projections of changes, and determine future scenarios. It helps us evaluate the results,

effectiveness, and impact of the various public policies and projects implemented to achieve sustainable development. In this context, we have focused on different aspects of measuring local development, starting from the fact that different kinds of composite indexes developed to measure development in line with the idea of sustainable development in the past have mostly been suitable for measuring development at national and/or regional level, while the measurement in accordance with the broader idea of development at the level of smaller territorial units is limited. In addition, several challenges that its creators must cope with were highlighted, related to the participatory approach in the process of design and development of the indicators, selection of relevant and meaningful indicators, reliability and availability of data, various methodological issues and the need to make the indicators or composite indexes useful for policy purposes. The overview of various pilot studies dealing with the construction of indicators and various challenges that are inevitably part of the process represents a core for evaluating the approach used to measure the development of municipalities in Slovenia.

We were able to identify numerous challenges in that case. The Municipal Development Coefficient, an approach to measure the development of municipalities in Slovenia, is mostly based on various indicators covering the economic dimension of development, while a minimal proportion of indicators could be classified as those that attempt to measure the quality of environment and social development, thus failing to be relevant to contemporary development trends, particularly to the idea of sustainable development. Furthermore, *the Municipal Development Coefficient* does not indicate anything about the overall quality of life in the specific area. The existing approach of measuring the development of municipalities in Slovenia is thus administrative in nature and less useful or even useless for understanding development problems, policy issues and identification of possible solutions. Therefore, a new composite index is needed. Various measurement systems developed by institutions or as a part of various research projects all over the world, their strengths and weaknesses, can be of great help in developing a novel system for measuring the sustainable development of municipalities in Slovenia in order to provide a real tool, that could support evidence-based decision making and have a meaningful impact on development policies at the local level in line with future visions, in progress towards sustainable development and high quality of life.

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