THE CYPRUS JOURNAL OF SCIENCES

PUBLISHED BY AMERICAN COLLEGE

VOL. 21 / 2023

The Cyprus Journal of Sciences
The e-Journal of American College

The Cyprus Journal of Sciences

2023 Vol. 21

CONTENTS

THE IMPACT OF DIVERSITY IN THE HOTEL INDUSTRY

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ABSTRACT

Diversity, in the context of this paper, refers to differences and similarities in individual and organizational characteristics, practices, values, experiences, backgrounds, and beliefs. The concept of diversity has gained significant attention in the hotel sector, given the industry's diverse characteristics of customers and stakeholders. Implementing diversity policies and practices can positively and negatively impact businesses in the hotel sector. Positive effects include improved customer satisfaction, employee satisfaction and retention, and positive brand image. However, diversity can result in increased costs in recruitment and diversity training programs.

Keywords: *Diversity, Inclusion, Customer Satisfaction, Employee Satisfaction, Brand Image, Diversity Training, Diversity Management, Workplace Diversity.*

1. INTRODUCTION

The term diversity is commonly used to describe a collective mixture of differences and similarities, including individual and organizational characteristics, social, cultural, political, and religious values, beliefs, experiences, and backgrounds (Madera et al., 2023). Diversity is essential in the hotel industry because the sector relies on employees and clients from different backgrounds. Implementing diversity and inclusion policies and practices can positively impact short-term and long-term performance in the hotel sector. The benefits of diversity in the hotel industry include improved customer satisfaction due to the provision of products and services that address customers' unique needs and value their beliefs and practices. A diverse workforce is more innovative and creative as individuals utilize their unique experiences and knowledge to find solutions to challenges in the industry.

Additionally, a diverse work environment promotes cross-cultural communication enabling customers from different backgrounds to be served satisfactorily and feel valued and welcomed. A diverse work environment attracts talented individuals allowing the hotels to attract and recruit top talents in the sector and benefit from their knowledge and skills in the industry. However, skill shortage is a significant challenge making it difficult to find enough talented individuals from underrepresented groups.

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The cost of implementing diversity training programs and recruiting individuals from underrepresented communities can affect the overall profitability of a business, making it less attractive to investors. However, the long-term benefits of establishing a diverse workforce and business environment outweigh the costs making it necessary for any business seeking to succeed in the hotel sector to embrace diversity. This article explores the impacts of diversity in the hotel industry and emerging trends in diversity in the sector.

2. LITERATURE REVIEW

2.1. Overview of diversity in the workplace

Diversity in the workplace has gained significant traction since 1990 when it was first coined (Robertson, 2019). Many companies have started appreciating the importance of having a diverse team with individuals from different backgrounds and characteristics. According to Robertson (2019), socioeconomic trends have changed the number of types of people constituting organizational workforces resulting in more heterogeneous teams. Advancements in human, women, and civil rights movements over the years have also contributed to increased labor force participation by minority groups (Robertson, 2019). Increased socioeconomic development worldwide has also contributed to business development and the expansion of multinational organizations to new regions, resulting in the need to hire individuals from new areas. As a result, many multinational organizations have diverse teams constituting employees from different cultural, political, and social regions (Swartz et al., 2019).

2.2. Historical perspective of diversity in the hotel industry

The hotel industry has witnessed a historical evolution of diversity initiatives. Over the years, researchers and investors have learned and increased their recognition of the importance of diversity and inclusion in the hotel sector. Syed and Ozbilgin (2019) note that the concept of diversity management has changed over the years to encompass more unique differences and characteristics in society. According to Sheehan et al. (2018), the hotel industry is labor-intensive, so hotels must employ immigrants from diverse backgrounds to address the labor supply shortage in developed nations. In the United States, the government has established federal policies to promote diversity and inclusion in the workplace and encourage public and private organizations to provide opportunities to people from all backgrounds (Kalargyrou and Costen, 2017).

2.3. Benefits of diversity in the hotel industry

The benefits of having a diverse team are well-documented and researched. Swartz et al. (2019) note that organizations with diverse groups are more likely to excel and achieve their goals because they have teams of individuals with different lived experiences who bring vast knowledge, ideas, and skills necessary to develop different approaches to problems affecting the organizations. Goldberg et al. (2019) note that establishing teams with diverse perspectives makes it easier to create innovative solutions to modern issues faced in the industry. Additionally, diverse teams of individuals from different age groups and gender can be more effective in promoting skill development and sharing ideas. For instance, younger employees who are more conversant with current trends, such as technology advancements, can help senior staff better understand the trends, while senior staff can also teach younger employees practical approaches and strategies used by the organization over the years (Ashton, 2018).

Customer satisfaction is an essential determinant of success in the hotel industry as it influences customers' willingness to purchase hotel products and services. A diverse workforce brings a wide range of cultural backgrounds and experiences, allowing hotels to develop products and services that are better suited to cater to the unique needs and preferences of guests from different backgrounds (Nguyen et al., 2022). Thus, having a diverse workforce makes it easier to personalize services, enhancing the overall customer experience as the benefits are tailored to individual needs and cultural expectations. Multinational hotels and most big hotels often target local and foreign customers; thus, multilingual staff significantly improves communication with guests from different regions, making it easier for them to access hotel services and feel welcomed (Kim et al., 2017). Moreover, diversity promotes cross-cultural communication and understanding in guest interactions leading to more positive interactions between customers and hotel staff. The interactions between employees from different cultures make the staff familiar with different cultural norms and practices making it easier for them to serve clients from similar cultures and create a welcoming atmosphere (Manoharan and Singal, 2017).

A diverse workplace promotes a sense of belonging and inclusion as every employee feels valued and respected (Maj, 2023). Employees working in diverse and inclusive environments are also more likely to express their authentic selves, resulting in better job satisfaction and lower incidences of workplace-related stress (Garcia-Rodriguez et al., 2020). A study by Rahman et al. (2023) found that employees in organizations with inclusivity policies had higher job satisfaction and felt more welcome. Higher job satisfaction often translates to positive mental health and motivation among employees at the workplace. Overall, this results in improved performance by the hotel and achievement of organizational objectives, including profitability and growth.

2.4. Challenges and barriers to achieving diversity in the hotel industry

2.4.1 Recruitment and hiring practices

Skill shortage in many regions makes it an uphill task for many organizations in the hotel industry to find and employ individuals from diverse backgrounds. Sheehan et al. (2018) note that skill shortage is a significant challenge with far-reaching consequences in the hotel industry, forcing many hotels to restructure their hiring process to include training and development of new staff. The language barrier is also a significant challenge in the hiring process for most hotels, especially those establishing branches in foreign nations with different languages from the companies' primary language of operation. Kichuk et al. (2019) showed that many hotels are forced to change their recruitment and hiring processes to achieve diversity in their workforce. This often requires compromising the qualifications requirement and increases the cost of employee training programs. Conventional recruitment practices often result in unconscious biases, as individuals from specific backgrounds may be left out for lacking organizational skills (Kichuk et al., 2019).

2.4.2 Inclusive workplace policies

Some hotels' lack of effective diversity and inclusion policies often hinders efforts to create an inclusive work environment. Rahman et al. (2023) note that poor workplace inclusivity policies significantly contribute to a hostile work environment, especially for members of vulnerable groups such as LGBTQ members. In other organizations, some officers often misused workplace inclusivity policies, making it even more difficult to create an inclusive workplace (Miles-Johnson and Linklater, 2022). In some cases, implementing inclusive policies can compromise quality and competence in hiring and recruitment practices, which can be a challenge to human resource personnel and costly in the long term.

For instance, if an organization implements policies requiring a certain percentage of its workforce to be members of minority or vulnerable groups, the recruitment teams are forced to reject skilled applicants from majority groups and hire less experienced or qualified individuals from minority or disadvantaged groups (Manoharan and Singal, 2017). While the lack of skills among employees from minority groups can be addressed through training and skill development programs, the costs of such programs may negatively affect the organization's revenues. Therefore, hotels must conduct evaluations to ensure the long-term benefits of such training programs exceed the costs. Otherwise, they can only recruit the most qualified employees from the larger pool of candidates.

2.4.3 Leadership and management commitment

Implementing diversity in leadership structures can be challenging, especially for privately owned hotels. Kalargyrou and Costen (2017) note that while most hotels are committed to achieving diversity in their workforce, the majority lack diversity in their leadership structure. The lack of diversity in the leadership structures of most hotels can also be attributed to the low number of highly skilled individuals from minority groups working in the hotel sector. Manoharan and Singal (2017) found out that many individuals from minority groups tend to avoid careers in industries where they are less likely to receive support; thus, only a few pursue careers in fields that are considered discriminatory. In other organizations, the lack of support from management and recognition of the unique needs of individuals from diverse backgrounds often repel employees from taking up careers in the private sector (Kalargyrou and Costen, 2017).

2.5. The Impact of diversity on customer satisfaction

2.5.1 Customer preferences and perceptions of diversity

In the hotel industry, success is significantly dependent on employee-customer interactions. Thus, customers' image and perception of a hotel's staff are essential and influence their willingness to purchase products and services from the hotel. Hotels serve clients from all walks of life, making it crucial that their staff can connect with customers from different backgrounds and serve them without biases (Madera et al., 2023). When customers from different backgrounds can interact with staff who understand their unique experiences and are willing to offer services that address their needs, they are likely to report higher satisfaction rates and be loyal to the hotel. Customers are also expected to be curious to learn about other cultures through interacting with staff from different backgrounds, which can be an exciting experience. For instance, when visiting a foreign country, tourists know the locals' local cultural practices, beliefs, and recipes while communicating effectively with staff who understand the customers' languages and cultures (Nguyen et al., 2022). Additionally, a diverse workforce brings diverse perspectives to a hotel, allowing for the convergence of different ideas and enabling the hotel to explore different solutions to customer issues.

2.5.2 Cross-cultural communication and customer service

A diverse workforce ensures that customers from different backgrounds can find someone who understands their experiences and whom they can communicate with. Furthermore, diversity in the workplace gives employees a chance to interact and learn

the different practices, values, norms, languages, and beliefs from different backgrounds, enhancing their ability to interact and communicate with customers from diverse backgrounds (Kalargyrou and Costen, 2017). Cross-cultural communication is enhanced in diverse workforces as employees interact with colleagues from diverse backgrounds and learn how to communicate in a culturally sensitive way. This helps hotel staff to bridge language gaps and overcome language barriers when serving customers from different cultures. A multilingual staff facilitates smooth interactions with customers from diverse backgrounds, enabling effective communication and enhancing customer service and experiences. Diversity in the hotel sector can also promote customer service by establishing rapport and trust between a hotel's staff and guests. When guests feel understood and valued, they are more likely to develop a positive perception of the hotel and its services and even recommend their friends to the hotel. Effective cross-cultural communication is necessary when handling complaints and resolving issues within the workforce and with guests. A diverse workforce ensures that a hotel has staff who can effectively communicate with guests and address their concerns in an empathic and understanding manner (Madera et al., 2023).

2.6. The influence of diversity on employee engagement and retention

2.6.1 Employee Satisfaction

Workplace diversity has a direct positive impact on employee satisfaction due to the creation of an environment where everyone feels welcomed (Rahman et al., 2023). The primary goal of inclusivity policies at the workplace is to create an environment where every employee feels valued and respected regardless of their background or identity. This also promotes tolerance and understanding as the staff learns how to interact with others professionally, even if they do not agree with their beliefs or practices. When employees feel respected and included in the workplace, they will be more satisfied, leading to higher performance and retention (Sheehan et al., 2018). Employee satisfaction can improve through the many learning and growth opportunities in a diverse work environment. Exposure to different cultures and viewpoints enables employees to expand their knowledge and understanding of different cultures and the world. Continuous learning and personal growth can increase job satisfaction as employees add skills that make them more marketable and advance in their careers.

2.6.2 Employee performance

Implementing diversity policies in hiring and recruitment practices allows hotels to recruit from a wider talent pool, increasing the chances of recruiting skilled and high-

performing individuals. When seeking to create a diverse workforce, hotels also benefit by accessing a larger talent pool since they are not limited to employees seeking a 9 to 5 job with benefits (Sheehan et al., 2018). The wider talent pool also means higher competition in the marketplace, which can result in improved performance among current employees, knowing they can be replaced if they fail to deliver as per their contracts. Improved performance can also be attributed to increased employee engagement in a diverse workplace. When employees understand their strengths and weaknesses and are willing to open up to their colleagues for support, they learn new skills and recognize the unique abilities of their colleagues. The overall result is improved individual and team performance in providing customer services, translating to higher performance and positive reviews.

2.6.3 Diverse teams and collaboration

Collaboration and teamwork are enhanced in a diverse workforce as every employee possesses unique skillsets and expertise that they can use to complement each other's strengths and fill in knowledge gaps. Each employee can use their unique experiences to bring in new perspectives on how the hotel can manage emerging issues. Through collaborative efforts, the employees share ideas and innovate solutions to current and future problems enabling the hotel to achieve long-term sustainability and profitability (Shelley Andre, 2018). Furthermore, diversity fosters creative problem-solving where employees can analyze situations from different perspectives and approach challenges from unique angles. Thus, collaborative brainstorming sessions in diverse workplaces enhance problem-solving and contribute to individual growth as employees acquire new skills and knowledge that they can utilize throughout their careers. Diversity can improve collaboration by reducing stereotypes and prejudices as employees interact and learn the truth about cultures, religions, ethnicities, and beliefs (Syed and Ozbilgin, 2019). A diverse workplace allows individuals to interact with others from different backgrounds and know them personally, minimizing any preconceived biases and fostering friendships beyond the workplace.

2.6.4 Employee development and training for diversity and inclusion

A diverse work environment provides expanded networking opportunities for employees to learn about different cultures and acquire skills to overcome challenges encountered when dealing with customers from different backgrounds. In addition to developing cross-cultural communication skills, a diverse workplace encourages employees to learn empathy and improve emotional intelligence. These skills enable the staff to understand and respect diverse perspectives, resulting in improved workplace relationships and interactions with customers from different backgrounds

(Kalargyrou and Costen, 2017). However, creating a diverse workforce can be challenging, and using the wrong approach could result in many workplace conflicts and misunderstandings. As a result, it is necessary to educate employees on diversity and inclusion to ensure they understand and appreciate working with individuals from diverse backgrounds. Many hotels train their staff on the importance of cultural awareness and tolerance to ensure they understand the unique needs of customers from different backgrounds and minimize unconscious biases that may negatively affect service delivery and customer experience (Syed and Ozbilgin, 2019). The increasing recognition of the role of diversity in customer satisfaction has also led to many hotels developing exchange programs for their staff to work and experience different cultures across the world, enhancing their knowledge of diversity.

2.7. Diversity and innovation in the hotel industry

2.7.1 Creativity and problem-solving in diverse workforces

Innovation is a significant driver of success in the highly dynamic hotel sector, making businesses need to exploit all means of improving creativity and innovation. Establishing a diverse workforce can effectively enhance innovation by bringing together individuals with diverse ideas and experiences (Nguyen et al., 2022). Employees from diverse backgrounds bring ideas on how the hotel can tailor its services and products to meet the needs of customers from similar backgrounds and with similar experiences, resulting in the innovation of personalized products and services that enhance customer satisfaction and loyalty. Creativity and innovation are enhanced in a diverse workplace through increased collaboration where team members can analyze future needs in the sector from different perspectives and identify the best way for the hotel to prepare to address forecasted needs. International hotel brands with employees in different regions benefit by sharing ideas on products and services between teams and identifying how different products and services can be tailored to suit the needs of local and international guests (Madera et al., 2023).

2.7.2 Product and service development

The hotel industry is dynamic, and customer preferences constantly change with market trends. This makes it necessary for businesses in the industry to be flexible and quickly adapt to the changing market demands and trends (Gomez and Bernet, 2019). A diverse workforce can better understand and respond to diverse customer needs, allowing organizations to stay agile and thrive in the dynamic industry (Manoharan and Singal, 2017). The increased adaptability is reflected in the ability of the hotel to develop new products or modify current products and services to suit the changing needs of customers in the market. For instance, having employees from different

generations makes it easier to understand the needs and expectations of customers from different age groups, enabling a hotel to tailor its services and products to meet the needs of all generations.

2.8. The effect of diversity on brand image and reputation

Hotels that prioritize diversity are often perceived more positively by customers, investors, and other stakeholders. Embracing diversity reflects the commitment to providing equal opportunities to all individuals, including those from underrepresented groups. Organizations that actively engage in diversity and inclusion programs are considered to contribute positively to social unity and equality (Manoharan and Singal, 2017). Additionally, a hotel that embraces diversity is more likely to offer products and services that are culturally sensitive and an environment that is welcoming to customers from diverse backgrounds. Hotels with a reputation for valuing diversity can attract customers from diverse backgrounds because the guests are assured of services that align with their values and practices. Such a positive reputation can promote customer loyalty and encourage customers to refer their friends and family to such hotels (Manoharan and Singal, 2017). Furthermore, a hotel that embraces diversity and inclusion can be an attractive employer to top talents in the sector as everyone will want to work in an inclusive and supportive environment.

2.9. Overcoming challenges and promoting diversity in the hotel industry

2.9.1 Best practices for recruitment and hiring

Establishing a diverse workforce starts with hiring and recruiting individuals from diverse backgrounds; thus, hotels must have effective ways of identifying, recruiting, and hiring employees from a diverse pool. Some strategies hotels can use to overcome skill shortages and establish diversity include: utilizing diverse sourcing channels such as social media and digital media platforms, local community organizations, and international organizations (Roberson, 2019). Hotels can shift to diversity-focused job platforms and networks that enable employers to attract skilled candidates from marginalized or underrepresented groups. Partnerships with local community organizations can also increase employers' reach and access to qualified individuals from diverse backgrounds in the community. The recruitment panels established by hotels should be diverse to allow for broader perspectives in candidate evaluation. This ensures that there are individuals in the recruitment and hiring committees with a good understanding of the unique experiences and needs of candidates from vulnerable or underrepresented communities. Including professionals from diverse backgrounds in recruitment panels also sends a positive message to candidates that the hotels are inclusive (Manoharan and Singal, 2017).

Similarly, involving professionals from diverse backgrounds in developing recruitment processes, including interviews, minimizes the chances of unconscious bias in the evaluation processes and allows for a more effective evaluation of candidates' skills and qualifications. Adopting screening processes that eliminate potential biases in recruitment processes can be an effective way of promoting diversity in the hotel sector. For instance, the use of a blind resume screening process, where personal information like name, gender, age, ethnicity, sexual orientation, and religion are hidden during the initial recruitment stages, ensures that all candidates are evaluated purely based on qualifications and skills, rather than their backgrounds or beliefs (Stephens et al., 2020).

2.9.2 Diversity training

Inclusion is a continuous process requiring hotels to constantly review their diversity policies and practices to ensure their workforce reflects the diverse nature of society. In addition to recruiting employees from diverse backgrounds, businesses in the hotel sector must establish continuous training programs for their employees to increase their awareness and understanding of the unique needs of customers from different backgrounds and make adjustments to develop a continually inclusive workplace (Roberson, 2019). Diversity training also improves employees' cross-cultural communication skills enabling them to serve customers from diverse backgrounds and enhance their experiences (Manoharan and Singal, 2017). Thus, diversity training can effectively overcome cross-cultural communication challenges and promote positive interactions between hotel staff and guests.

2.9.3 Leadership strategies for promoting diversity and inclusion

Leadership structures and strategies influence the implementation of diversity and inclusion practices in a workplace. An organization with a diverse leadership structure is more likely to have a diverse workforce than one with a non-inclusive leadership structure (Manoharan and Singal, 2017). Thus, businesses in the hotel sector should strive to establish a diverse leadership structure by having individuals from different backgrounds included in the top leadership and management teams. A diverse management team is more likely to make inclusive decisions on important issues affecting employees, ensuring that decisions made by the management do not favor certain individuals and exclude others within the workforce (Madera et al., 2023). Including professionals from diverse backgrounds in the leadership of a hotel can have other positive effects, such as creating a positive public image that will encourage customers to purchase products and services from the hotel (Madera et al., 2023). With the increasing public awareness of the importance of diversity in the workplace, more customers want to be associated with businesses with a diverse workforce, as

this means the company provides equal opportunities to all members of society. Most international hotel brands have gradually adopted diversity policies in their top management by including managers from different backgrounds. For instance, Hilton Hotels and Marriott International are ranked among the most diverse organizations in the hotel sector, which is said to contribute significantly to the positive brand image and customer loyalty (Manoharan et al., 2021). Good leadership is vital when addressing systemic barriers that hinder diversity and inclusion in the organization. Hotels can enhance their leadership through diversity training for leaders to increase their awareness of the unique challenges faced by underrepresented groups and identify policies and practices within the organization that undermine diversity and inclusion (Kalargyrou and Costen, 2017). In addition to diversity training, hotels can tie diversity goals to performance evaluations and reward leaders who promote diversity and inclusion within the organization.

2.10. Future trends and implications for the hotel industry

2.10.1 Emerging diversity initiatives in the hospitality sector

Diversity initiatives continue to evolve as the concept of diversity in society and professional fields changes. In the hotel sector, some emerging diversity initiatives include supplier diversity programs where hotels actively seek and support suppliers from underrepresented and minority groups. These partnerships help create more economic opportunities for individuals from diverse backgrounds and promote a diverse supply chain that contributes positively to the business objective of inclusion and diversity. For instance, by providing opportunities to businesses owned by women or members of the LGBTQ community, hotels expand the diverse composition of their partners, and they can use it as a marketing point to attract customers and establish a positive brand image (Gould et al., 2020). Another emerging diversity initiative is inclusive marketing and representation, where hotels conduct inclusive marketing campaigns showcasing diverse guests and staff members. These campaigns aim to accurately represent the hotel's diverse clientele and reflect their commitment to inclusion (Roberson, 2019). The diverse menus and services offered are also marketed to show customers they can access services and products specifically designed to suit their unique needs. Cultural competence and diversity training programs are also vital initiatives that continue to evolve to foster tolerance and sensitivity among employees to create work environments conducive and supportive to individuals from all backgrounds. In the future, more effective training programs to equip employees with skills to interact with other employees and customers from diverse backgrounds will likely emerge and be implemented by businesses in the hotel sector (Swartz et al., 2019). In addition to performance metrics, diversity and inclusion metrics are emerging as key strategies for tracking and evaluating diversity and inclusion

programs and identifying areas that need improvement. The development of data-driven approaches can help hotels set specific diversity goals and monitor the effectiveness of their diversity initiatives in contributing to achieving the set goals.

2.10.2 Technological advancements and diversity

Technological advancements have the potential to influence diversity and inclusivity by revolutionizing recruitment, employee engagement, guest experiences, and overall business practices. In recruitment, new technologies such as social media platforms can improve talent sourcing, enabling hotels to reach a more diverse pool of candidates worldwide. Additionally, new platforms that offer targeted job advertisements and diversity-focused recruitment platforms can make it easier for hotels to get candidates from underrepresented communities. Social media marketing platforms allow hotels to increase awareness of their diversity programs and services tailored to meet the needs of customers from diverse backgrounds. More hotels are leveraging social media to market their products to local and foreign visitors and ensure everyone is welcome. The emergence of Artificial Intelligence (AI) and machine learning algorithms can improve hiring and recruitment practices to reduce unconscious bias and ensure that hiring practices are fair to all candidates. Machine learning and AI can also be used to anonymize evaluation processes and ensure appropriate initial screening processes. Virtual technologies are also changing traditional work structures by enabling remote work and allowing businesses in the hotel sectors to establish diverse teams by recruiting individuals from different geographical locations. The ability to work remotely also makes it easier for individuals from underrepresented or vulnerable communities to work from safe locations. For instance, women can work remotely in regions with hostile beliefs or practices towards women participating in different careers. Language translation and interpretation technologies can solve the language barrier that undermines diversity in many regions (Elshaer and Marzouk, 2019). Hotel staff can use such technologies to communicate with guests and employees who speak different languages, ensuring efficient communication and improving service delivery. The translation and interpretation tools promote effective cross-cultural communication and enhance guest experiences, making it easier for the hotel to report higher customer satisfaction and loyalty rates.

3. CONCLUSIONS

The concept of diversity is gaining significant attention in the hotel industry, and many organizations are actively recruiting skilled employees from diverse backgrounds and targeting clients from diverse backgrounds. Governments and civil rights societies have also increased campaigns to encourage companies to create

diverse workforces that reflect society's diversity and provide employment opportunities to everyone. Regardless of whether the motive to create a diverse workforce is internal or external, businesses in the hotel sector stand to benefit more from having a diverse workforce and establishing diverse work environments. Diversity has both direct and indirect positive impacts on the hotel sector. The immediate results include increased cross-cultural communication enabling the hotels to serve customers from diverse backgrounds, thus increasing their customer base. Diversity can promote innovation and creativity as employees from different backgrounds bring in new ideas and perspectives based on their unique experiences, enabling businesses in the hotel sector to develop or improve products and services to enhance customer satisfaction and increase profitability. The interactions between employees and guests from diverse backgrounds can be an excellent opportunity to learn about other cultures, beliefs, and practices, promoting cultural awareness and cross-cultural communication. Other benefits of diversity include increased customer satisfaction as hotels develop unique products and services tailored to suit the needs of individual customers and take into account their backgrounds and beliefs. Employee satisfaction and motivation are improved in a diverse work environment where every person's views and beliefs are valued and respected. Diverse work environments also recognize the unique experiences of individuals from vulnerable groups and provide support to enable them to grow in their careers. However, implementing diversity policies and practices can be challenging due to the high cost of sourcing and developing talents among underrepresented groups. The need to achieve diversity can compel organizations to compromise on qualifications and skills when hiring individuals if the organizations cannot find qualified persons from underrepresented groups. Diversity is a crucial determinant of hotel sector success and significantly influences industry strategic decisions and practices.

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PRODUCTIVE EFFICIENCY AND EFFECTIVE PRODUCTION: A LITERATURE REVIEW APPROACH

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ABSTRACT

Effective production refers to a business model and associated methods to eliminate non-value–added activities that waste resources for more efficient production and better product quality, becoming a dominant division of labour to maintain high levels of productivity. This paper regards one important aspect of the recent empirical literature on efficiency measurement: the analysis of production frontiers, the relationship between input and output, and the adjoining sources of efficiency. A better understanding of the process of generating efficiency requires studying the deeper determinants and factors which explain the differences in efficiency growth.

Keywords: *Effective Production, Productive Efficiency, Performance, Knowledge.*

1. INTRODUCTION

1.1. Scope

As far as producer behaviour is concerned, economic theory assumes that producers optimize both from a technical and economic perspective. However, it is unlikely that producers operate at the efficiency frontier, implying the existence of inefficiency. This paper analyses the degree to which producers fail to optimize and the extent of any resulting distances from efficiency.

One of the most important hypotheses in modern economic theory is based on the assumption of optimizing behaviour, either from a producer or a consumer approach. As far as producer behaviour is concerned, economic theory assumes that producers optimize both from a technical and economic perspective:

- From a technical perspective, producers optimise by not wasting productive resources.
- From an economic perspective producers optimise by solving allocation problems involving prices.

However, not all producers succeed in solving both types of this optimization problem under all circumstances. In real economic life, it is unlikely that all (or

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possibly any) producers operate at the full efficiency frontier, with failure to attain the efficiency frontier implying the existence of technical or allocative inefficiency (Fagerberg 2000, Ghobakhloo and Fathi 2019, Lavopa and Szirmai 2018).

For these reasons, it is important to analyse the degree to which producers fail to optimize and the extent of any resulting distances from the frontier of full technical and economic efficiency, mainly due to the following reasons:

1. First, only by measuring efficiency and separating the associated effects from those of the operating environment is it possible to explore hypotheses concerning the sources of efficiency essential to improve performance.

2. Second, efficiency measures are success indicators by which producers are evaluated, and the ability to quantify efficiency provides a control mechanism with which to monitor the performance of a production unit.

3. In addition, if policy and planning concern themselves with the performance of a particular economic unit, it is important to know to what level a given producer may be expected to increase output by simply increasing efficiency without absorbing any further resources.

More specifically, a measure for evaluating performance at the producer level is productive efficiency through production frontier analysis. This concept compares the transformation process of converting inputs into outputs. Each production process involves a production frontier, which represents the current state of technology in the industry. The efficiency frontier denotes the maximum output attainable from each input level (Coelli et al., 2005). A producer operating on the efficiency frontier is considered productively efficient.

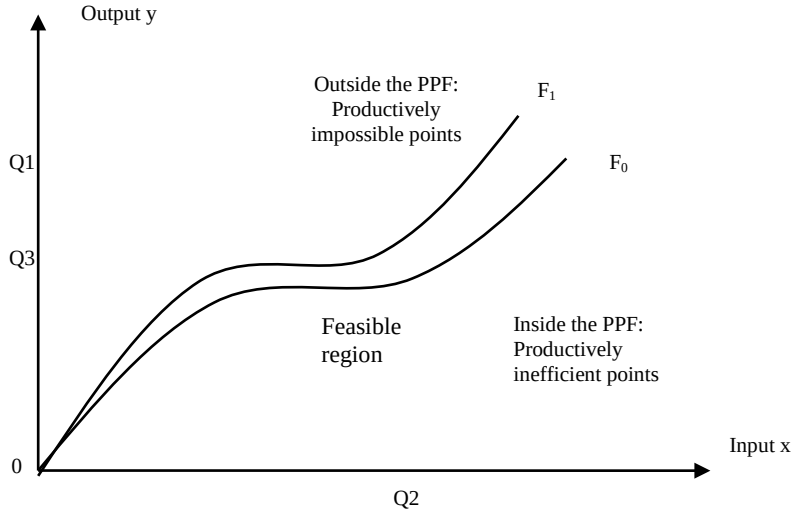
2. LITERATURE REVIEW

Stochastic production frontiers represent the maximum expected output for a given set of inputs. Derived from production theory, they assume that output is a function of input levels and the producer's efficiency in utilizing those inputs. This function delineates output associated with optimal input utilization, while acknowledging the stochastic nature of data arising from unmeasured determinants of production (Bondareva et al., 2022; Chiarini and Brunetti, 2019; Ndubuisi et al., 2022; Rath, 2019).

The disparity between actual and potential output typically arises from a blend of inefficiency and random error, the latter representing the stochastic element in production. Techniques have been devised to isolate the random component from the efficiency component, enabling a more accurate assessment of potential output. This

ensures that high output levels resulting from chance occurrences, rather than normal practices, do not unduly influence estimates. Additionally, when evaluating productivity changes over time, another factor—technical change—comes into play. This refers to technological advancements, often depicted by an upward shift in the production frontier. This is illustrated in the following figure by the movement of the production frontier from 0F0 to 0F1 in period 1:

FIGURE 1: PRODUCTION FRONTIERS AND TECHNICAL EFFICIENCY



Source : Authors' own elaboration, based on Coelli et al (2005).

In period 1, all firms can theoretically produce more output for each level of input compared to what was achievable in period 0. When observing an increase in productivity from one period to the next, the enhancement may not solely stem from efficiency improvements but could also result from technical advancements, the utilization of economies of scale, or a combination of these factors (Coelli et al., 2005).

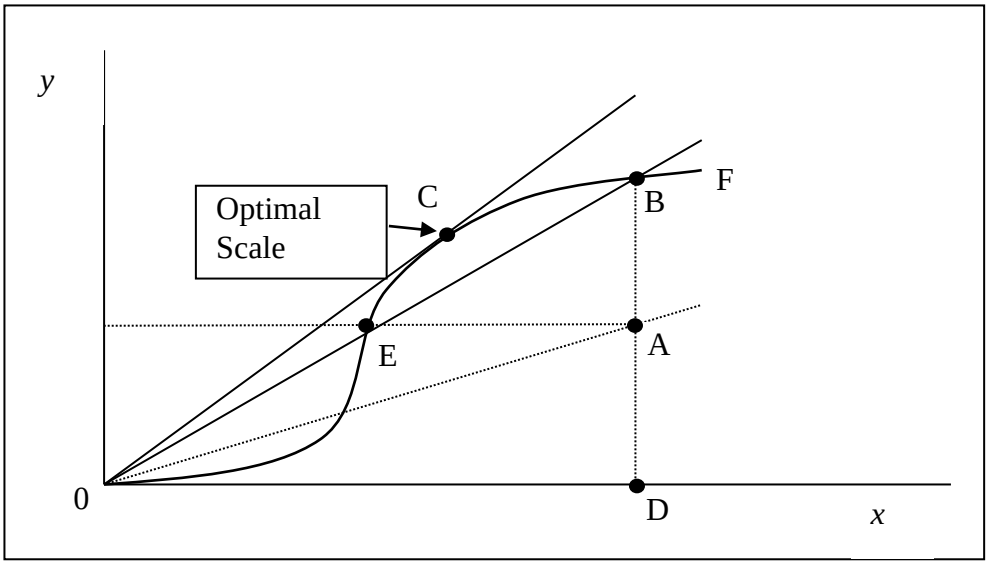
Efficiency denotes the relationship between what an organization produces and what it could potentially produce. Essentially, the efficiency of a production unit involves comparing its observed output and input values with their respective optimal levels. This comparison manifests in two ways. Firstly, it's the ratio of observed to maximum potential output attainable from a given input level. Secondly, it's determined by first considering the given input level and then measuring the ratio of

minimum potential input to observed input required for producing the given output. When assessing a producer's efficiency, we juxtapose its observed output and input values with their optimal counterparts.

The optimum is typically defined in terms of production possibilities, with efficiency being a technical aspect. However, it's also plausible to define the optimum based on the behavioral objectives of the producer. According to Wang et al. (2002), productivity and efficiency are paramount in performance measurement. Nonetheless, these terms, productivity and efficiency, are often used interchangeably, despite not being precisely synonymous (Coelli et al., 2005).

The disparity between efficiency and productivity is best illustrated with a simple production process, as demonstrated in the following figure (adapted from Coelli et al., 2005). Consider a scenario where a single input (x) generates a single output (y), and three different producers are represented by points A, B, and C. The productivity of point A can be quantified by the ratio DA/0D, adhering to the productivity definition, where the x-axis denotes inputs and the y-axis represents outputs.

FIGURE 2: EFFICIENCY AND PRODUCTIVITY



y1

Source: Authors' own elaboration, based on Coelli et al. (2005).

In this figure, we utilize a ray originating from the origin to gauge productivity at a specific data point. The slope of this ray, y/x, serves as a productivity measure. If the firm operating at point A were to transition to the technically efficient point B, the ray's slope would increase, indicating higher productivity at point B. However, moving to point C positions the ray tangent to the production frontier, signifying maximum possible productivity (exploiting scale economies). Point C represents the technically optimal scale, and operation at any other point along the production frontier yields lower productivity.

Given the same input, it is quite clear that productivity can be further improved by moving from point A to point B. The new level of productivity is then given by BD/0D. Clearly, productivity can be represented, therefore, by the slope of the ray through the origin which joins the specific point under study. The efficiency of point A, on the other hand, can be measured by the ratio of the productivity of point A to that of point *B, i.e.,* $\frac{AD/0D}{BD/0D}$.

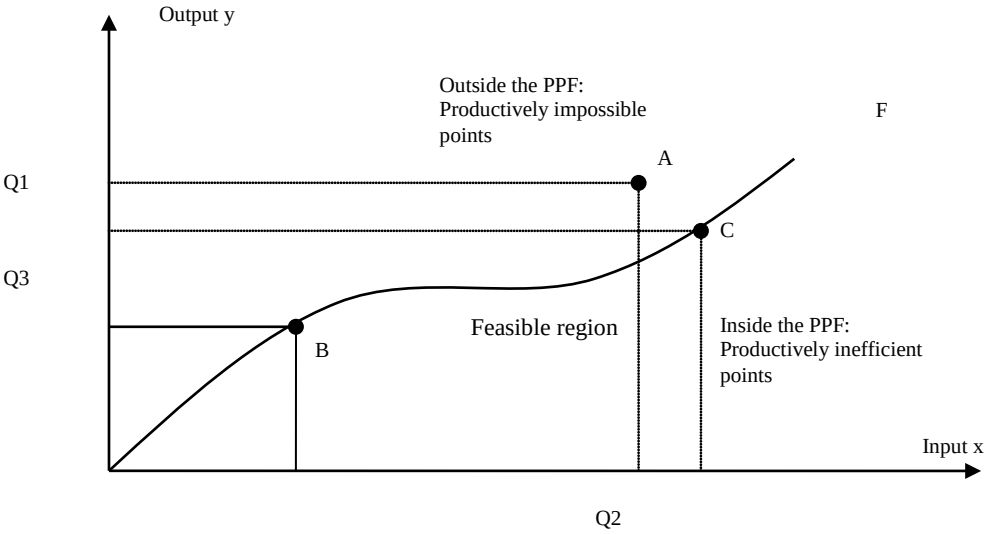
As meticulously expounded in Kumbhakar and Lovell (2000), productive efficiency denotes the degree of success achieved by producers in allocating inputs and generating outputs to fulfill specific productive objectives. To measure productive efficiency, it's imperative to delineate producers' objectives and subsequently gauge their levels of success.

A fundamental distinction between these approaches lies in the definition of the 'frontier.' The frontier denotes a bounding function or, more aptly, a set of best obtainable positions. Consequently, a production frontier delineates the maximum outputs attainable from a given set of inputs and technology, while a cost frontier delineates the minimum achievable cost given input prices and output. The production frontier, an unobservable function, epitomizes the 'best practice' function by bounding or enveloping the sample data.

The frontier approach acknowledges that observed output and potential output may diverge due to technical inefficiency in productive processes. This necessitates a new perspective compared to non-frontier methodologies, as estimated Total Factor Productivity (TFP) explicitly results from decomposing productivity growth into technological change and efficiency change.

Figure 3, depicts a straightforward production process where a single input (x) yields a single output (y). The production frontier, denoted by OF, illustrates the relationship between input and output, specifically the maximum output attainable from each input level given the prevailing state of technology.

FIGURE 3: PRODUCTION FRONTIERS AND TECHNICAL EFFICIENCY



Source : Authors' own elaboration, based on Coelli et al (2005).

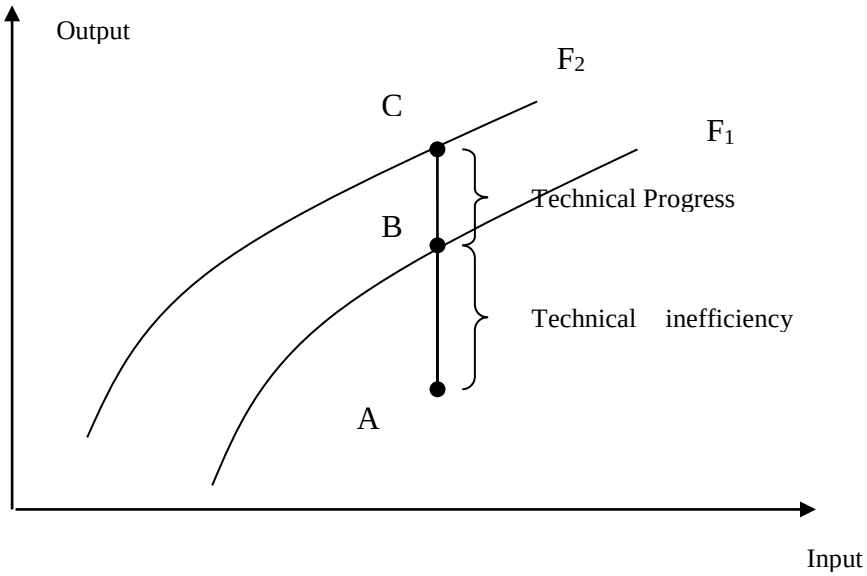
The feasible production set is the set of all input- output combinations which are feasible. It consists of all points between production frontier OF and the x-axis. The production frontier is a graph of maximum feasible output producible given fixed resources. Hence a production frontier envelopes producer outputs from above. If what a producer actually produces is less than what it could feasibly produce than it will lie below the frontier. The distance by which a producer lies below its production frontier or above its cost frontier is a measure of the producer's inefficiency (Bera and Sharma, 1999). The further below the production frontier a producer lies, the more inefficient it is. The points along the production frontier define the efficient sub-set of this feasible production set and they show the technically efficient combinations of input and output. On the other hand, the points beneath the production frontier show the non-technically efficient combinations, respectively. In this figure, e.g. point *(A)* is inefficient; points *(B)* and *(C)* are efficient points.

The type of efficiency quantifiable using a production frontier is technical efficiency. The degree of technical efficiency of a specific producer is determined by the relationship between observed production and an ideal or potential production level. Assessing producer-specific technical efficiency relies on comparing observed output with the best or most efficient production frontier. If a producer's actual production point aligns with the frontier, it is considered perfectly efficient.

Conversely, if it falls below the frontier, the producer is deemed technically inefficient, with the ratio of actual to potential production defining the individual producer's efficiency level (Herrero and Pascoe, 2002).

Technological progress is assumed to elevate the frontier of potential production, whereas efficiency change alters the capacity of productive units to enhance production using available inputs and technology. The following figure illustrates this concept:

FIGURE 4: THE FRONTIER AND NON-FRONTIER TFP GROWTH MEASURE



Source: Authors' own elaboration.

As illustrated in the above figure, F_1 and F_2 are production frontiers in periods 1 and 2, respectively. Technical efficiency, which is represented by a movement towards the frontier from *A* to *B*, refers to the efficient use of inputs and technology due to the accumulation of knowledge in the learning-by-doing process, diffusion of new technology, improved managerial practices, etc. Thus *AB* shows technical inefficiency in period 1. The absence of technical inefficiency in the non-frontier approach is related to the implicit assumption of long-term equilibrium behavior whereby producers are said to be fully efficient as they have had time to learn and adjust their input and technology use appropriately. Thus, the non-frontier TFP growth measure is

only made up of the movement from *B* to *C*, which represents technical progress due to technological improvements incorporated in inputs. Therefore, technical progress and TFP growth are used interchangeably within the non-frontier framework. Unlike the non-frontier approach, the frontier approach is able to decompose output growth not just into input growth and TFP growth; it goes a step further to decompose TFP growth into various efficiency components such as technical progress and gains in technical efficiency.

The frontier TFP growth measure, on the other hand, consists of outward shifts of the production function resulting from technical progress as well as technical efficiency related to movements toward the production frontier. The frontier approach to total factor productivity (TFP) measurement makes it possible to distinguish between shifts in technology and movements towards the best-practice frontier. By estimating the best-practice production function (an unobservable function), this approach calculates technical efficiency as the distance between the frontier and the observed output.

Efficiency performance is conventionally judged utilizing the concept of economic efficiency, which is generally assumed to be made up of two components: technical efficiency and allocative efficiency. The former is defined as the capacity and willingness of an economic unit to produce the maximum possible output from a given bundle of inputs and technology level. The latter concept is defined as the ability and willingness of an economic unit to equate its specific marginal value product with its marginal cost.

In neoclassical theory, all producers are assumed to operate at potential technical efficiency at points along the frontier FF'. Any inefficiency will be solely allocative. Thus, if a producer is operating on its frontier FF', its point of economic efficiency may be at B, the point of tangency with its price line. If it operates at B, with inputs I1 and output Q1, there will be maximum profits $\pi 1$ and no allocative or economic inefficiency. It should be noted that, provided producers are operating on their technical frontiers, allocative (in)efficiency will be the same as economic (in)efficiency (they are used synonymously in the literature) because of the theoretical assumption of potential technical efficiency. Thus, if a producer is operating at point A on its frontier, using inputs I2 and producing output Q2, its profits may be $\pi 2$, and its allocative/economic inefficiency will be measured as $\pi 2/\pi 1$.

In practice, with new technology, producers operate at less than potential technical efficiency owing to incomplete knowledge of best technical practices or other organizational factors that prevent them from operating on their technical frontier. Thus, a producer will operate on an actual or perceived production function which is below the potential frontier, e.g., on AA'. At I2 inputs, it operates at point C, produces Q3 output, and earns $\pi 3$ profits. At this actual production function, point C is allocatively inefficient. To maximize its profits ($\pi 4$), it would have to operate at point D, use I3 inputs, and produce Q4 output. However, at D, it would not achieve potential

economic efficiency, for by definition, potential economic efficiency can only be achieved with potential technical efficiency.

To be consistent with neoclassical production theory, efficiency should only be measured in relation to the frontier production function FF'. Thus, if a producer is operating at point C on its actual or perceived production function, its economic inefficiency would be measured in profit terms by the ratio $\pi 3/\pi 1$, or in output terms by the ratio Q3/Q1. Now, it can easily be seen that this economic inefficiency comprises two components: technical and allocative inefficiencies.

In profit terms, the total loss in economic inefficiency in operating at point C is $\pi 1 - \pi 3$. Of this, the loss from technical inefficiency is $\pi 3 - \pi 2$, and the loss due to allocative inefficiency is $\pi 1 - \pi 2$. In output terms, the losses are Q2 - Q3 and Q1 - Q2, respectively. The various models for measurement that follow are based upon this conceptual framework.

The basic concept underpinning the measurement of technical efficiency starts with the description of production technology (Anttila, et al. 2021, 2019).

Koopmans (1951) defined a feasible input-output vector to be technically efficient if it is technologically impossible to increase any output and/or to reduce any input without simultaneously reducing at least one other output and/or increasing at least one other input. While Koopmans offered a definition and characterization of technical efficiency, it was Debreu who first provided a measure or an index of the degree of technical efficiency with his coefficient of resource utilization. When there is no such feasible reduction, the production unit is said to be technically efficient with a score of one. In any other case, the production unit is characterized as inefficient and has a technical efficiency score lower than one.

Debreu (1951) introduced distance functions into economics. Distance functions introduce the distance from some observed input-output combination to the frontier of technology (Fried et al., 2008). Distance functions allow one to describe production technology without the need to specify a behavioral objective (such as cost minimization or profit maximization). Distance functions describe technology in a way that makes it possible to measure efficiency and productivity. The concept of a distance function is closely related to production frontiers. The basic idea underlying distance functions involves radial contractions and expansions in defining these functions. Distance functions are functional representations of multiple-output, multiple-input technology that require only quantity data of those inputs and outputs. Thus, distance functions allow modelling the production frontier as well as deviations from it. These deviations represent technical inefficiency while shifts in the frontier represent technological change.

Debreu (1951) and Koopmans (1951) were mainly concerned with the measurement of efficiency, and although they produced careful measurements of some or all of the inputs and outputs used in the production process of a decision-making

unit, they failed to combine these measurements into any satisfactory estimate of efficiency.

The advantages of these quantity-based functions over value-based functions are that they do not require either input prices or output prices in their construction, and they do not rely on assumptions regarding economic behavior, such as revenue maximization or cost minimization (Zofio and Lovell, 2001).

Farrell (1957) extended the work initiated by Koopmans (1951) and Debreu (1951) by noting that production efficiency has a second component reflecting the ability of producers to select the right technically efficient input-output vector in light of prevailing input and output prices. This led Farrell (1957) to define overall productive efficiency as the product of technical and allocative efficiency.

Farrell (1957) first obtained a partial decomposition of efficiency into technical and allocative components, and he also proposed indexes of technical, allocative, and overall efficiency. However, Farrell (1957) reminds us of the empirical necessity of treating Koopmans' definition of technical efficiency as a relative notion, relative to the best observed practice in the reference set or comparison group. This provides a way of differentiating efficient from inefficient production states, but it offers no guidance concerning either the degree of inefficiency of an efficient vector or the identification of an efficient vector or combination of efficient vectors with which to compare an efficient vector. If the theoretical arguments as to the relative efficiency of different economic systems are to be subjected to empirical testing, it is essential to be able to make some actual measurements of efficiency. Equally, if economic planning is to concern itself with particular industries, it is important to know how far a given industry can be expected to increase its output by simply increasing its efficiency, without absorbing further resources (Andreoni and Tregenna, 2020).

The main goal of every enterprise is to meet the needs of consumers and all interested parties. Consumers drive high demand for goods and services, contributing to the company's leading position in the market (Bondareva et al., 2021; Filatova et al., 2015). This, in turn, ensures an increase in the quality of finished products, reduces equipment downtime, enhances the production plan, and decreases losses (Bondareva et al., 2022).

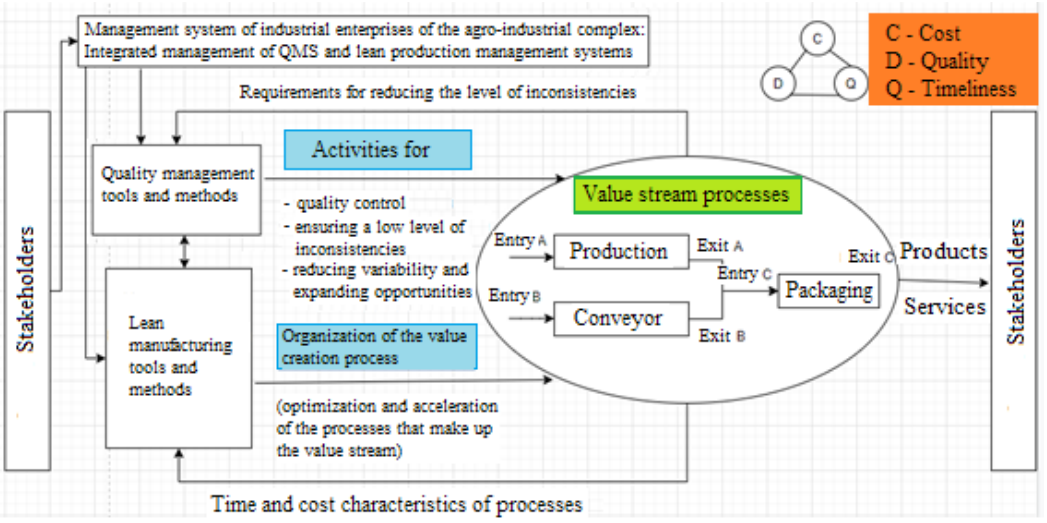
Currently, to significantly increase the efficiency and effectiveness of organizations, the concept of lean production is being introduced. The BP system allows for the elimination of the main causes of costs and losses in the organization, such as (Alvesson and Thompson, 2005):

1. overproduction of products;
2. the appearance of excess stocks in warehouses;
3. irrational transportation of finished products;
4. moving production equipment;
5. reduced waiting time;

6. excessive processing of raw materials;
7. the release of defective products for sale;
8. continuous improvement of product quality at all stages of production;
9. cost savings on the production of raw materials;
10. reduction of unnecessary space;
11. involvement of employees of all departments;
12. increasing the satisfaction of stakeholders; and
13. competitiveness in the market.

Integration of the quality management system and the lean production management system is achieved through the creation of a unified flow management system. This system facilitates the planning, implementation, control, and improvement of products or services with the necessary quality, cost, and time characteristics of product flow, aligning with the requirements of consumers and other stakeholders of the organization (Fagerberg, 2000; Ghobakhloo and Fathi, 2019; Lavopa and Szirmai, 2018; Krafcik, 1988; Womack et al., 1990; Kruse et al., 2021; McMillan et al., 2014). The model for integrating the quality management system and the lean production management system, developed for industrial enterprises in the agro-industrial complex, is illustrated in Figure 5.

FIGURE 5: A MODEL FOR INTEGRATING PRODUCTIVE EFFICIENCY SYSTEM



Source: Temasova, et al (2022).

The specifics of an organization's activities can only be effectively addressed when creating an integrated system by leveraging the efforts of its own employees and departments with highly qualified personnel.

In general, this integration will combine the systems into a cohesive whole that meets the necessary requirements, thereby increasing the efficiency and effectiveness of the organization. The focus areas for this integration, include:

1. Effective production (right ideas for effective production, methods and tools of industrial engineering for performance and production effectiveness).
2. Effective administration (definition of administration process in the company, process analysis and improvement models for efficient administrative processes, teamwork and motivation for effective administration and production).
3. Effective logistics (core principles of effective enterprise logistics, material and information flows).
4. Effective innovation processes (ICT & innovation).
5. Effective Innovation concepts (Best practices– practical examples).

In the modern knowledge economy, growth extensively depends on the presence or formation of a network and environment favorable to innovation, which is based on endogenous development capabilities. Even though producer-specific factors are important determinants of innovation activity, technological opportunities and a favorable entrepreneurial environment positively affect innovation activity as well. Technological change, innovation, and the creation and diffusion of technology are crucial to economic progress (Kokkinou, 2010).

Combining production functions to create and disseminate innovations leads to improvements in productivity and efficiency. However, at any given moment, when technology and the production environment are essentially the same, producers may exhibit different productivity levels due to differences in their production efficiency. Within the growth process, therefore, the efficiency of production resources becomes a critical element, as it involves utilizing available yet scarce resources more productively. Within this framework, productivity represents an estimation of how well a producer uses available resources to produce outputs from inputs. However, productivity theory literature has emphasized factors such as productive efficiency, mainly through technological spillovers, increasing returns, learning by doing, and unobserved inputs (e.g., human capital quality), while the empirical industrial organization literature has emphasized the degree of openness of countries to imports and industry structure (Koop, 2001).

Consequently, one of the main questions is to investigate the relationship between inefficiency and several factors likely to be determinants, and measure the extent to which they contribute to the presence of inefficiency. These factors are neither inputs

to the production process nor outputs of it but nonetheless exert an influence on producer performance. Such factors are widely referred to as efficiency explanatory variables.

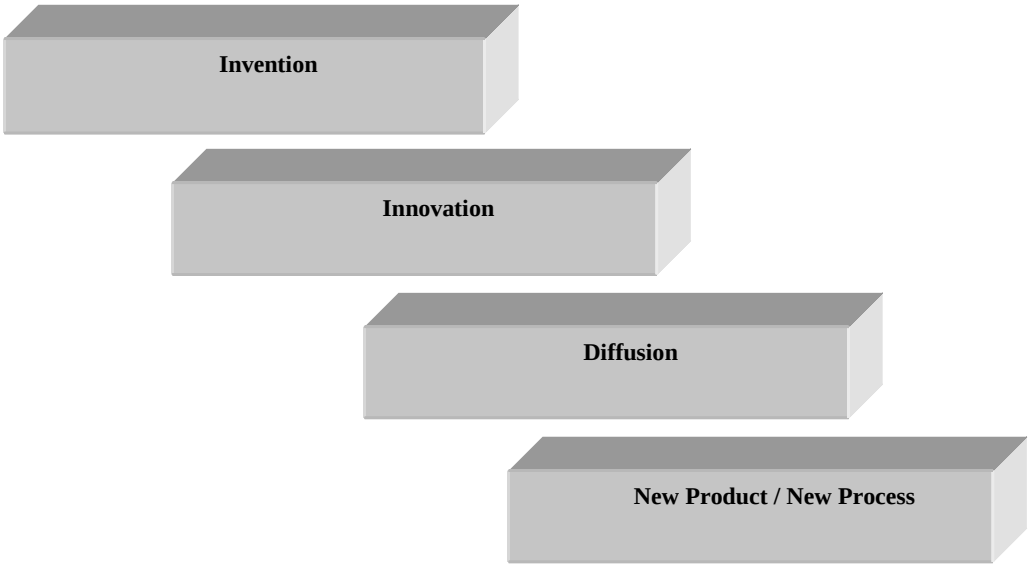
In this context, the term "efficiency explanatory variables" is used to describe factors that could influence the efficiency of a producer, where such factors are not traditional inputs and are not under the control of the producer. However, they may influence productive efficiency. In particular, to investigate the determinants of productive efficiency, we distinguish between producer- or industry-specific factors and efficiency explanatory factors.

Efficiency explanatory factors are not under the direct control of the producer, at least in the short run, and they may be industry-affiliated, such as producer location characteristics, managerial restrictions, slow adaptation to changes in the market environment and/or technological developments, asymmetric information in the labor market, social aspects, geographical or climatic conditions, regulatory and institutional constraints, ownership differences (public/private), and government regulations (Coelli et al., 2005). Producer-specific factors, on the other hand, refer to characteristics that can be influenced by the producer in the short run, such as producer size, R&D intensity, and degree of outsourcing.

Within this framework, based on Wang (2007), since R&D is one of the most crucial elements in promoting growth, it is argued that any production unit that uses R&D resources inefficiently may be subjected to a growth penalty in the form of a much smaller benefit from R&D investment. If R&D resources are not used effectively, additional investment may be of little help in stimulating economic growth. Literature has already been devoted to investigating the economic aspects and effects of R&D investment. It has been considered that R&D could result in better production technology and also raise productivity as well as rates of return on investment at both the producer and industry levels.

Technology and innovation play an important role in economic growth, and technology has become one of the most important factors in growth models. The role of innovation is multifaceted: as a driving force, it directs producers to ambitious and long-term objectives, leads to the renewal of methods of production, supply, distribution, management, and marketing, and industrial structures, and the emergence of new industries. This results in a broader spectrum of products and services, as well as relative markets. Inputs affect intermediate inputs, which consequently affect and define productivity and competitiveness levels. Technological change, innovation, and the creation and diffusion of technology are important factors for economic progress. While innovation may lead to divergence between producers or nations, imitation through diffusion and dissemination tends to erode differences in technological competencies, leading to convergence, as described in Figure 6.

FIGURE 6: INNOVATION AND EFFICIENCY GROWTH



Source: Authors' own elaboration.

The economic processes that create and diffuse new knowledge are critical in the development process, and there are powerful connections between investment in human capital, technological change, and productive efficiency (Acs, Anselin, and Varga, 2002). New technologies increase the productivity of production factors, contributing to the long-term improvement of efficiency. For example, new equipment investments require a well-trained workforce for efficient operation. While general education is a key factor for developing countries, its effect is expected to be less pronounced in more developed countries, which already have high levels of general education. For developed economies, human capital is enhanced through better skills and in-company training. An increase in the quality of workers allows for increased efficiency in capital use, which, in turn, boosts output growth. Additionally, certain types of capital investment may have a greater impact than others. Some studies suggest that investment in machinery and equipment is more important than investment in buildings and structures, while others argue that investment in infrastructure is crucial for productivity growth, attributing high payoffs to such investments.

At any given moment, when technology and the production environment are essentially the same, producers may exhibit different productivity levels due to differences in their production efficiency. Within the economic growth process, the

efficiency of resource productivity becomes a critical element, as it involves utilizing available, yet scarce, resources more productively.

Within this framework, productivity represents an estimation of how well a producer uses available resources to produce outputs from inputs. Productivity theory literature emphasizes factors such as productive efficiency, mainly through technological spillovers, increasing returns, learning by doing, and unobserved inputs (e.g., human capital quality). In contrast, empirical industrial organization literature highlights the degree of openness of countries to imports and industry structure (Koop, 2001; Kokkinou, 2011a, 2009a, b).

Innovation and technology are important sources of industry competitiveness through facilitating cooperation. They can improve collective processes of learning and the creation, transfer, and diffusion of knowledge, which are critical for innovation. Such cooperation and the networks formed help translate knowledge into economic opportunity while building relationships between organizations, acting as a catalyst for innovation.

Following the main findings from the literature survey, two complementary sets of conditions must be satisfied for industries to sustain productivity and efficiency in a competitive environment. First, they must have suitable levels of both physical infrastructure and human capital. Second, in the new knowledge-based economy, they must have the capacity to innovate and effectively use both existing and new technologies. Industrial and innovation policy aims to strengthen the competitiveness of producers by promoting competition, ensuring market access, and establishing an environment conducive to R&D. Lack of innovative capacity stems not only from deficiencies in the research base and low levels of R&D expenditure but also from weak links between research centers and businesses and slow adoption of information and communication technologies. Knowledge and access to it have become the driving force of productivity, much more than natural resources or the ability to exploit abundant low-cost labor, and have become major determinants of economic competitiveness. Through knowledge and innovation, industries can increase their productive efficiency. Innovation, therefore, is essential for maintaining and strengthening efficiency, which is crucial for achieving sustained economic development.

These environmental factors are spatially confined externalities with different scales of influence. Some factors, such as the legal and cultural framework or large research institutes, operate mainly at the national level, generating national systems of innovation. Other factors, such as skilled labor supply and networks linking firms and support institutions, have a more limited territorial span and form the basis of regional systems of innovation.

3. CONCLUSIONS AND POLICY IMPLICATIONS

As technical efficiency enhancement becomes an increasingly important issue within Europe and worldwide, policy planning should draw attention to a wide range of policy implications, including policies geared towards stability and efficiency, eliminating market distortions and uncertainties, as well as improvements in the economic system's efficiency.

The key factors influencing competitiveness are access to innovation, R&D, and international trade. The main recommendations revolve around three key areas: innovation and research and strengthening networks and clusters; responsible use of natural resources; and the need for open world markets with fair competition. Clustering, collaboration, and the formation of strategic alliances are becoming increasingly important. Continuous R&D and innovation efforts are essential elements in guaranteeing the long-term competitiveness of Europe's manufacturing industries. European research, technical development, and innovation policies should focus on developing the framework conditions that stimulate innovation, entrepreneurship, and thus, growth and employment. Innovation for sustainable manufacturing requires attention to the interfaces between R&D policies and other critical policy fields. Strong emphasis needs to be placed on the management of the interfaces between R&D policy and other policy realms, such as competition policy, intellectual property rights, standardization, education and training, environmental policy, labor market, employment and social policy, to facilitate the creation of a sustainable European manufacturing industry environment, along with fiscal instruments and incentives. Understanding future challenges and issues is important for future developments in manufacturing. Industrial change driven by new technological opportunities will impact manufacturing structures in the European Union, contribute to sustainable growth, and improve technical efficiency (Alexiadis, et al., 2011).

Finally, technical progress is another major determinant, as new technologies allow the automation of production processes, leading to many new and improved products, better and closer links between firms, and improved information flows and organization of production. At the same time, technical progress can be embodied in new equipment, and trained workers can only be fully productive if they have the appropriate equipment with which to work. Increases in physical capital are clearly necessary, as there are spillovers from capital investment to productivity growth. Thus, it is not appropriate to consider physical capital, human capital, and technology as separate factors since their contributions are closely linked. It is the combination of these three factors and the way in which they are organized and managed within the industry that will determine the extent of productivity growth. For sustained output growth, it is also important that a balance between the three main factors be maintained (Korres, et al., 2011).

Promoting technical and productive efficiency within the European Union has resulted in a growing challenge for policymakers. Productive and regional disparities and inequalities are an increasing issue for the European Union to consolidate, and as a result, policymakers have to adapt the policy agenda considering industrial and innovation policy to enhance technical and productive efficiency capabilities.

As asserted above, globalization and worldwide competition have shifted the comparative advantage of corporations and economies towards the factor of knowledge and innovation, where entrepreneurship based on technical efficiency enhancement plays a crucial role in growth, productivity, and competitiveness enhancement. To promote innovation activities and technological opportunities, entrepreneurship enhancement is significant not only for business success but also for the long-term performance of the economy as a whole. From this perspective, growth policies should focus on creating a favourable environment for cooperation between firms and institutions that support the development and exploitation of knowledge, innovation, and technical efficiency. Furthermore, policies should promote the entrepreneurial relations between firms and institutions, fostering the development and dissemination of expertise, the mobility of human and physical capital, and the enhancement of relationships between business and research entities. Specifically, they should encourage actions such as promoting innovation, technology transfer, interactions between firms and higher education and research institutes, networking, industrial cooperation, and support for research and technology supply infrastructure (Kokkinou, 2011a, 2010, 2009a, b; Maty et al., 2022; Hoellthaler et al., 2018; Konte et al., 2022; Parente and Prescott, 1994; Rasche and Seidl, 2019).

As mentioned, innovation and technology are important sources of regional competitiveness through facilitating cooperation between the various parties involved in both the public and private sectors. In particular, they can improve collective processes of learning and the creation, transfer, and diffusion of knowledge, which are critical for innovation. Such cooperation and the networks that are formed help to translate knowledge into efficiency opportunities. Such actions should extend to all the policy areas relevant for economic, scientific, and social development and should ideally establish a long-term policy horizon.

These conditions are largely related to productive and technical efficiency and include, among others, the capacity of a regional economy to generate, diffuse, and utilize knowledge and so maintain an effective production system.

Towards this direction, our expected contribution is considered providing a better understanding of the contribution of technical change, ICT investment, innovation activities, and economic openness to technical efficiency, taking into account the interrelationships and complementarities between innovation and efficiency. This thesis investigates various aspects of the relationship between productive efficiency and determining factors to reach a better understanding of the contribution of alternative factors to technical efficiency growth. Industries should investigate and act

towards identifying, developing, and deploying their resources that may influence their technical efficiency, competitiveness, and consequently their productivity performance, with better identification and understanding of the key resources, mainly increased knowledge about the impacts of different determining factors on technical efficiency (Appelbaum, et al., 2000; Bondareva, et al., 2021; Temasova et al., 2022).

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AN ESSAY ON THE CYPRUS MINIMUM WAGE

PANDELIS MITSIS*

ABSTRACT

In Cyprus, until recently, legally binding wage minima existed only in the non-unionized occupations. In the unionized sectors there were non-binding benchmarks for minimum remunerations, and those were provided by collectively bargained 'indicative' starting salaries. This situation changed on the 1st of January 2023, when a national minimum wage was introduced for the first time in the island's history. The present essay describes the historical development of the minimum wage legislation in Cyprus and it reviews the related literature. It also discusses the main issues related with the introduction of the minimum wage at a national level and it outlines some major concerns in regards to its current and future implementations.

Keywords: *Cyprus, National Minimum Wage, Labor Market Legislation.*

1. INTRODUCTION

The effect of statutory minimum wages on the economy is an issue that has gained a lot of attention in the literature, partly due to conflicting theories and findings from empirical studies. The 'textbook' competitive labor market model predicts that when a minimum wage is introduced above the competitive wage, this will lead to reduced employment or unemployment. On the other hand, in monopsony models, there is a possibility that a minimum wage increase may actually increase employment. In both approaches, competitive model and monopsony, most of the existing studies examine cases where a minimum wage has nearly universal coverage. That means that the effect of minimum wages is usually investigated in countries where almost all occupations are entitled to receive the minimum wage. This was not the case in Cyprus where, until recently, only a small number of occupations were entitled to receive a minimum wage.

Indeed, in the period 1960-2022 only a small number of occupations were protected by the minimum wage legislation in Cyprus. For the rest of the workers, the bipartite wage negotiations were not subject to a legally binding minimum wage. Until the 1st of January 2023, when a national minimum wage was introduced, the related legislation (Law on Minimum Wages, Chapter 183) provided a legally binding minimum wage only for the following occupational groups: 1. Salespersons, 2. Clerks, 3. Auxiliary healthcare staff, 4. Auxiliary staff in nurseries, 5. Auxiliary staff in

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crèches, 6. Auxiliary staff in schools, 7. Guards, 8. Caretakers working in clinics, private hospitals and nursing homes, 9. Cleaners of corporate premises and 10. A number of low-income hotel occupations.

The 'universal' minimum wage which was introduced in 2023 currently covers all occupations and economic sectors, with the exception of domestic, maritime, agricultural and livestock workers. The current essay describes the historical development of the minimum wage legislation in Cyprus and it reviews the related literature. The essay also outlines some issues related with the introduction and implementation of the national minimum wage and it discusses the main concerns in regards to its current and future development.

2. HISTORICAL DEVELOPMENT

The Cyprus Minimum Wage Law was created in 1941 with the aim to protect certain categories of non-unionized workers which were paid very low wages. In that manner, the minimum wage legislation initially covered only a number of occupations. For the rest of the workers, bipartite wage negotiations were not subject to an institutional minimum. This section describes the historical development of the minimum wage legislation in the island, separating the period examined into four distinct components: (a) 1941-1980, (b) 1981-2012, (c) 2013-2022 and (d) 2023-present.

2.1. 1941-1980: Launch of Minimum Wage and infrequent adjustments

The Cyprus Minimum Wage Law was created in 1941. It was one of the three labor market legislations introduced by the British Colonial Government[1], as a response to increasing pressures from the trade union organizations for better working conditions in the island (Moustaka, 2010). Despite the fact that the trade unions were then in their infancy, they succeeded in persuading the colonial government to launch a legally binding minimum wage (MW), with the aim to cover certain categories of non-unionized workers paid at a very low rate. The reason that the MW was not introduced at a national level (i.e. it did not cover 100% of the workforce) was that the remunerations of the workers in the rest of the occupations were considered to be effectively protected by their trade unions (Mitsis, 2013).

The Minimum Wage Law was put into effect in the following year (1942) and it initially covered only workers in mines and quarries, where the working conditions were considered as the harshest in the entire country (Moustaka, 2010). In 1944 the Law was amended to include shop and office employees (i.e. salespersons and clerks) and in 1957 mining workers ceased to be included in the minimum wage legislation, leaving salespersons and clerks as the only covered occupations in the law.

A particular flaw of the Minimum Wage Law that came into operation in 1942 was that it did not include a provision for the inflationary losses of workers' remunerations due to a rising cost of living[2]. This meant that the MW was not automatically adjusted for inflation and it could only be amended via a government decree. Such adjustments of the MW did not occur, though, as often as one would expect. In the period 1941-1980 (which included the benchmark year of 1960, when Cyprus gained its independence from the United Kingdom) the MW was adjusted only four times, in 1951, in 1974, in 1977 and in 1979.

1974 was the year that a military coup, followed by the Turkish invasion, ended in the partition of the island along the UN-monitored Buffer Zone which still divides it today, while 1977 was the year that the Ministry of Labor, Welfare and Social Insurance (MLWSI) adopted the main International Labor Organization conventions which underpin collective bargaining[3]. 1979 was the year of the second international petrol oil crisis, which had a substantial impact on wages in Cyprus, through the wage indexation mechanism[4].

2.2. 1981-2012: Expansion of Minimum Wage coverage and regular adjustments

As described above, the first minimum wage decree in Cyprus appeared in 1941, but the MW was adjusted only four times in the first four decades. During that period, changes in the coverage of the minimum wage legislation occurred only twice: in 1944 (inclusion of clerks and salespersons) and in 1957 (exclusion of mining workers). This changed in 1981, when the MW legislation started to be adjusted annually, instead of periodically[5]. At that time, the MW was identical for all covered occupations, but a separate wage grid applied to workers that completed six months' experience in their current employment. Another major development in MW occurred in 1990, when the Minimum Wage Law was amended in order to include four additional occupations: auxiliary healthcare staff and auxiliary staff in schools, crèches and nurseries.

The annual adjustment of the statutory MW in the island continued until 2012, despite the occurrence of major historical developments. The historical events which occurred in that period include the Oil Price Plunge of 1985-86 (when oil prices collapsed after OPEC countries decreased their oil production in order to keep prices high), the Gulf War in 1991, the Cyprus Stock Exchange Crisis in 1999–2000, the Accession to the European Union (EU) in 2004 and the late-2000s Global Financial Crisis. Even if those events had a significant effect on the labor market of Cyprus (see Mitsis, 2013. and Mitsis, 2015, for a list and a discussion), none of them constituted a reason to interrupt the annual adjustment of the MW to inflation and other economic phenomena,

As a consequence of these annual adjustments, the MW increased considerably in 1981-2012 (Mitsis 2013, 2019). The Kaitz Index (i.e. the ratio of the MW to the national median wage) rose from 38% in 1990/91 to 43% in 1996/97, and climbed to

50% in 2008/09. The latter change in the MW was the result of a government decision (Ministerial Decision No 55.535, 24 April 2002). This decision considered the 2002 level of the MW very low and it aimed at gradually bringing it up to 50% of the national median wage (something which was achieved in 2009). The changes in the monthly legal minimum wage for the whole period examined are summarized in Figure 1, later on.

Around that time (2008), the Minimum Wage Law was amended, again, in order to include security guards and caretakers working in clinics, private hospitals and nursing homes. In 2010 the Minimum Wage Law was amended, again, in order to include cleaning personnel in corporate buildings, after this was suggested by the findings of an ad hoc study carried out by the Statistical Service (CYSTAT). Until that time the MW was always set at a monthly level. This ceased to occur in 2009, when the minimum wage for security guards started to be set at an hourly rate and two years later the same occurred to the cleaners of business/corporate premises (Mitsis, 2013).

However, these rates only applied to the nine non-unionized occupational groups previously defined. In the public sector, the wages were always set by law, while for the rest of the workers, in the private sector, bipartite wage negotiations were never subject to an institutional minimum. Even if the sectoral collective bargaining agreements specified so-called 'indicative minimum starting wages' for a list of occupations (see Table 2, in Christofides, 2019), these minima laid out in collective bargaining agreements were not legally enforceable, unless built into an explicit contract or characterized by continuous employment.

2.3. 2013-2022: Economic crisis and stalemate in MW adjustments

As explained above, from 1981 until 2012, the Cyprus MW was annually revised, via a procedure involving a tripartite committee appointed by the MLWSI and a final approval from the Council of Ministers. That procedure was frozen in 2012, as a result of the economic crisis which predominated in 2012-2013. As a consequence of this economic turmoil, the legally binding MW of Cyprus, which had been rising rapidly in the previous decades, was frozen to €870 upon hiring and €924 after six months, plus hourly rates for cleaners and security guards[6].

The roots of the economic turmoil that caused the MW stalemate go back to the global financial crisis of 2008, that did not impact Cyprus until 2009. That year the real Gross Domestic Product (GDP) growth rate turned from positive to negative (Christofides, 2019) and, in 2012, a distinct and very severe banking crisis (which had been brewing for a while), caused the Government of Cyprus to seek external financial assistance. Despite a prompt response from the 'Troika' (International Monetary Fund, European Central Bank, and European Union Commission), a provisional understanding with the lenders was not reached until the end of 2012. The first austerity measures were not taken until the 2013 budget was approved. Elections and a

change in government followed, and a very broad and formal Memorandum of Understanding (MoU, 2013) was implemented.

Real GDP growth became positive again in 2015, the last full year of the MoU duration, and Cyprus formally exited the program in 2016, three years after its adoption. This economic recovery owed much to the very strong contribution to GDP growth by specific sectors and it unfolded in a context of fiscal prudency and a budget balance that was in surplus (Christofides, 2019). As previously mentioned, during that period the minimum wage was frozen to the value of €870 per month for starters, €924 per month for tenure over six months, and to the hourly rates specified in footnote 7.

However, these rates only applied to the nine non-unionized occupations previously defined. In the public sector, the wages were always set by law, while for the rest of the workers in the private sector, bipartite wage negotiations were never subject to an institutional minimum. Even if the sectoral collective bargaining agreements specified so-called 'indicative minimum starting wages' for a list of occupations (see Table 2, in Christofides, 2019, for further information), these minima (laid out in collective bargaining agreements) were not legally enforceable, unless built into an explicit contract or characterised by continuous employment[7].

A significant development occurred in 2020, when an agreement was reached between the Ministry of Labor, Welfare and Social Insurance (MLWSI) and social partners to specify minimum wages for a group of low-income occupations in the hospitality sector[8]. A Council of Ministers Order imposing these provisions was issued on the 8th of January 2020, putting those occupations in the same legal position as the nine occupational groups mentioned before. A synopsis of the changes in the coverage of the minimum wage legislation occurred in the total period examined (1941-present) is provided in Table 1.

2.4. 2023-present: Introduction of National Minimum Wage

The economic recovery which began in 2015 set into motion a process which would eventually lead to the implementation of a national minimum wage in Cyprus for the first time in its recorded history. In 2017 the re-election program of the (then) President of the Republic, Mr. Nikos Anastasiadis, stated that once full employment had returned (which is generally considered to exist when the unemployment rate is below 5%) a national MW should be considered, that would hold for all occupations. Whether that MW would be a single number and how would it be set and revised, it was left to be determined at a later stage. In 2018 Mr. Anastasiadis was re-elected and with the economic conditions constantly improving it looked like the President's promise in regards to a national MW would be soon fulfilled. However, the downward trend in unemployment was abruptly interrupted in 2020 with the outbreak of the COVID-19 pandemic and the necessary conditions for the introduction of a national MW did not arise until several years later.

TABLE 1: OCCUPATIONS COVERED BY THE CYPRUS MINIMUM WAGE LAW

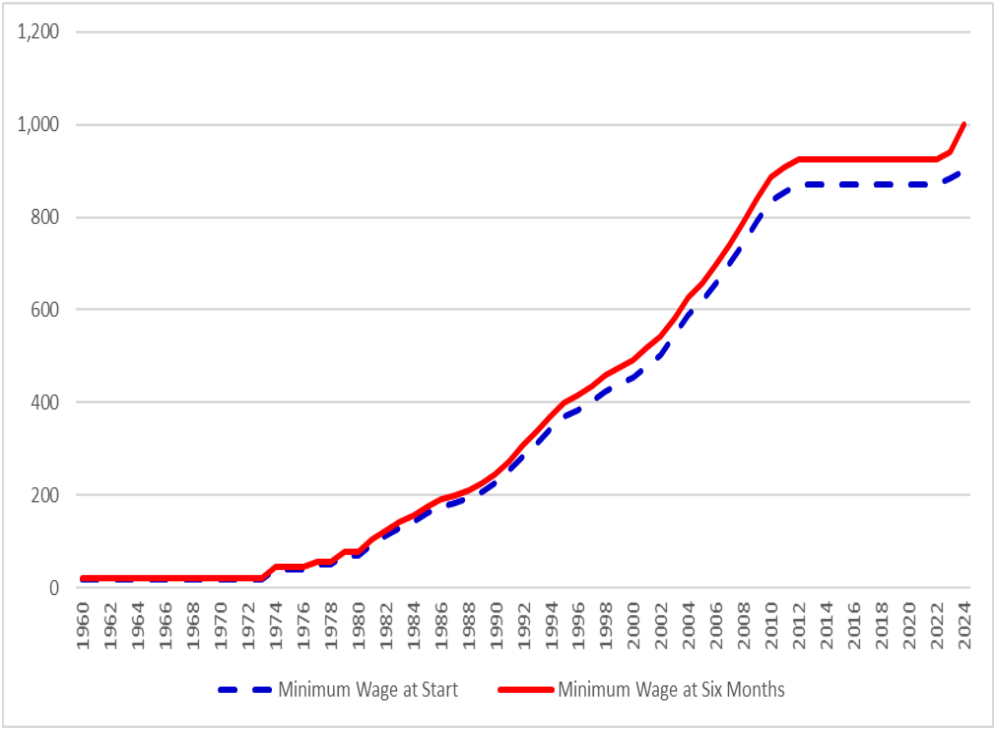
Occupations	**Period of Coverage**
1. Mining workers	1942 – 1957
2. Salespersons	1944 – present
3. Clerks	1944 – present
4. Auxiliary healthcare staff	1990 – present
5. Auxiliary staff in nursery schools	1990 – present
6. Auxiliary staff in crèches	1990 – present
7. Auxiliary staff in schools	1990 – present
8. Guards	2008 – present
9. Caretakers in clinics, private hospitals and nursery homes	2008 – present
10. Cleaners in corporate/business premises	2010 – present
11. Workers in specific occupations in the hotel industry	2020 – present
12. All economic occupations except domestic, maritime, agricultural and livestock workers	2023 – present

Source: The minimum wage decrees of the Ministry of Labour and Social Insurance (MLWSI) obtained from the Cyprus Government Gazette.

The introduction of a statutory national minimum wage in Cyprus was finally announced on the 31st of August 2022 after several months of discussions and negotiations. The level of the MW was set at €885 upon recruitment, which according to figures obtained from the Cyprus Statistical Service (CYSTAT) corresponded to 56% and 44% of the 2020 annual earnings median and mean, respectively (Mallis et al., 2022). The minimum wage would rise to €940 after six months of continuous employment at the same employer, which according to CYSTAT corresponded to 60% and 47% of median and average, respectively (Mallis et al., 2022).

The new Cyprus MW would cover all economic occupations and sectors, with the exception of domestic, maritime, agricultural and livestock workers. Workers employed in the hotel industry are exempted, since they are covered by the Minimum Wage Hotel Industry Order of 2020. Not a provision for price indexation (COLA) is included in the current Minimum Wage Law. Its implementation started on the 1st of January 2023 and it was to be reviewed in a year after its introduction. After that, a regular review would take place every two years. The Department of Labour Relations and the Joint Inspection Service of the MLWSI, would be responsible for the implementation, including inspection of workplaces and filing cases to Court in case of non-compliance of the minimum wage legislation.

FIGURE 1: THE EVOLUTION OF THE MINIMUM WAGE IN CYPRUS, 1960 - 2024



Notes: *Figure 1 presents the MW upon recruitment and the MW after six months of continuous employment with the same employer, in nominal values. The MW data were obtained from the decrees of the Ministry of Labour and Social Insurance. All amounts are expressed in euros (€).*

The first revision of the Cyprus national MW was decided on the 2nd of December 2023, when the current Minister of Labor, Mr. Yiannis Panayiotou, announced that the national MW would rise from €940 to €1000 (gross), after six months of employment in the same company. The Minister also decided to increase the national MW at the time of employment from €885 to €900. The implementation of these new MW grids will start on the 1st of January 2024. Figure 1 presents a graphical illustration of all the increases occurred in the MW grids from 1960 to 2024.

3. LITERATURE REVIEW

3.1. Seminal studies

There is no consensus regarding the benefits from and drawbacks of minimum wages in economic literature. According to classic economic theory (where the labour market is assumed to be perfectly competitive), increasing the minimum wage decreases the employment. In this perspective, if the minimum wage (MW) is set above the equilibrium wage, then more labour will be willing to be provided by workers and less will be demanded by employers, creating a surplus supply of labour, i.e. unemployment. Until the mid-1990s, this was actually the norm in the empirical findings, since MW was found to reduce employment, especially among low-skill and newly hired workers (see, for example Gramlich, 1976).

However, this classical approach, which has been drilled into all economists, was shaken (but not shed) in 1994, when one of the most influential studies in the area was published. David Card and Alan Krueger (1994, 1995) presented evidence that a rise in the minimum wage increased employment in New Jersey restaurants, contrary to the predictions of the classical model. This controversial finding gave ground for an alternative view to emerge in regards to the minimum wage effects. According to this alternative approach (where low-wage labor markets are dominated by monopsonistic firms), an appropriately set minimum wage could increase both wages and employment. This strand of the literature is surveyed by Boal and Ransom (1997) and Manning (2003).

Despite this ‘challenge’ of the classical position about the effects of the MW, surveys of a large number of papers, such as Brown and Hamermesh (2019) and Neumark (2018), continue to report mostly negative employment effects from the MW. As explained in Christofides (2019), these papers reviewed the existing literature and indicated that there is not a sufficient amount of knowledge in regards to what happens: (i) when a MW is initially introduced, (ii) when there are large increases in the MW, and (iii) when a MW is applied to individuals other than low-paid workers (such as teenagers and restaurant workers). Therefore, the existing literature is not very informative on what follows the introduction of a national MW (Christofides, 2021).

3.2. Empirical Studies on the Cyprus Minimum Wage

Focusing on the empirical effects of the minimum wage in Cyprus, only a few related studies appear to exist. Those are the PhD thesis of the author of the current essay (Mitsis, 2013) and two papers published from it – Mitsis (2015) and Mitsis (2019). The former study, Mitsis (2015), examines the dynamic effects of the MW on total employment using a time series model. Mitsis (2015) identifies a negative relationship between the MW and employment and it also suggests that the minimum wage policy in Cyprus created large dis-employment effects.

Another interesting finding of Mitsis (2015) is that the proportion of workers covered by the MW legislation did not have a statistically significant impact on total employment. If this finding was interpreted in a search and matching framework (see Mortensen and Pissarides, 1994, and Pissarides, 2000), where the minimum wage applies only to specific occupations (see Moser and Stahler, 2009), then it would suggest existence of significant spill-over effects to occupations that were not covered by the minimum wage legislation. In other words, Mitsis (2015) suggested that the MW was effective not only in the occupations covered by the MW law but also in occupations that were not covered by the MW legislation.

The latter study, Mitsis (2019), examined the effects of the MW using microdata from four Household Budget Surveys over the period 1990-2009. Mitsis (2019) examined the effects of MW on workers' earnings and on their probability of employment. It reported that a 1% increase in the MW lead to a 0.9% increase in the wages of workers in both the MW-covered and the MW-uncovered private sectors. From the employment equations, the study found that a 1% increase in the MW reduced the probability of employment by about 0.7%.

In that manner, the findings in Mitsis (2019), that there exist negative and significant effects from the MW in the MW-uncovered (unionized) sector, corroborate the results in Mitsis (2015), where it is implied that there exist significant spill-over effects to occupations that are not covered by the MW legislation. Those spill-over effects occur in the literature in cases where increases in the MW in the covered occupations act as a reference point, then raise bargaining power and finally trigger higher wage settlements in the uncovered occupations – which may also discourage employment.

Therefore, the empirical findings presented above suggest that the policy of the Ministry of Labor, Welfare and Social Insurance (MLWSI) to include only non-unionized occupations in the scope of the minimum wage legislation seemed justified, since the wages of the workers in the rest of the occupations were effectively protected by their unions. The results of these studies also indicated that whereas minimum wage policy in Cyprus improved the earnings of workers who remained employed, it also created large dis-employment effects in both covered and uncovered occupations. Both studies concluded that a policy dialogue was needed in Cyprus (between the

government, the trade unions and the employers' associations), in order to determine whether the goal of minimum wage legislation to protect certain categories of non-unionized workers was achieved.

4. MAIN CONCERNS

Even before the national MW was introduced, several concerns were raised in Cyprus in regards to its determination and implementation. Christofides (2019) raised a number of such concerns, including:

- What should the aims of a national minimum wage system be?
- What are the advantages and disadvantages of a national minimum wage relative to these aims?
- Does it accomplish these aims with certainty?
- If such a system were to be introduced, when should that be relative to the state of the labor market?
- Should it be introduced during a slump or a boom?
- Can the aims of the national minimum wage be achieved by other means, what might these other instruments be, and what are their relative advantages and disadvantages of each?

In addition, Christofides (2021) investigates the redistributive element of a national MW and whether this redistribution of income could be achieved without compromising overall competitiveness and employment. Christofides (2021) also discusses whether the level and adjustments of the national MW should be determined following advice from a truly independent advisory board, instead from the appointed labor advisory board. The latter, which is now the case, contains lobby groups which are certainly affected (government, employers, and the unions), but it lacks the detachment that independent economic and labor market experts may bring.

According to Charalambous (2022), the main objective of the MW should be to safeguard workers from low wages and ensure decent living conditions for them, without threatening the competitiveness and macroeconomic stability of the economy. Charalambous (2022) touches several other issues, as well, which may contribute in the successful implementation of the MW. He asserts that the main benefits from a national minimum wage would include income redistribution and a reduction in poverty. Tirkides (2022), on the other hand, argues that the real benefits from the national MW may not be in the form of reducing poverty and changing the income distribution to any noticeable degree. He believes that the real utility of the MW should be to create incentives that would boost productivity and improve the employer-worker relationships.

The latest study elaborating on the implementation of the national MW in Cyprus is Mallis et al. (2022). The authors of that mimeograph recognize that the regulation of the MW in Cyprus is generally aligned with the related EU directives[9]. However, they also stipulate that some parameters still need to be regulated for a smoother and more distinct MW implementation system in the island. For instance, the revision mechanism and the monitoring practices need to be specified and an hourly minimum wage needs to be defined, as well. The latter concern is also raised in Christofides (2019) and in Charalambous (2022). Mallis et al. (2022) conclude that the MW introduction will contribute to labor peace and it is a step forward to a better welfare state. However, they do not consider it a panacea to poverty and income inequality. They also emphasize that the MW has to be implemented in conjunction with other policy measures, in a way to maintain and enhance social cohesion without deteriorating public finances.

5. CONCLUDING REMARKS

This essay examined the historical development of the MW legislation in Cyprus and it discussed the economic literature in regards to a successful MW policy implementation. The study also described the background of the recent introduction of a national MW in the island and it outlined the main concerns in regards to its efficient implementation. One of the issues the existing studies point out is that it would be better if the MW was set on an hourly rather than a monthly basis, as is the practice in several EU countries. The existing studies also suggest that MW implementation should be monitored and adapted regularly, utilizing the whole spectrum of available information. What all those studies seem to have in common is that they agree on that the national MW in Cyprus should not be considered as a 'magic rand' that makes everything better automatically. It should be viewed, instead, as an effective tool that, if practiced with prudency and in conjunction with other useful economic policy measures, it can be very helpful to all parties involved.

NOTES

1. The other two laws introduced by the Colonial Administration in 1941 were (a) the Trade Unions and Trade Disputes Law and (b) the Trade Disputes, Conciliation, Arbitration and Inquiry Law.
2. However, the Minimum Wage Law of 1941 (Article 4) enabled the Governor to appoint, if he thought necessary, an advisory body to examine the wages paid in specific professions or businesses. The Minimum Wage Law of 1941 also gave to the Governor the right to set a binding minimum wage to any specific employer (Moustaka, 2010).
3. Remuneration and other employment issues in the private, semi-private, and local authority sectors in Cyprus were set through collective bargaining between employer and

worker organisations, mainly at the industry level and not at the enterprise level (e.g. individual banks) (Christofides, 2019).

4. The wage indexation system used at the time was a Cost-of-Living-Adjustment (COLA) mechanism that adjusted wages every six months using recent price developments. In that manner, the international events that affected the petrol oil market also had an impact on wages, through the national price level (see also Mitsis, 2013, 2015).
5. The adjustments of the MW were decided by a tripartite technical committee appointed by the Ministry of Labour, Welfare and Social Insurance (MLWSI), using wage indices and consumer price indexation as yardsticks. This committee was made up of representatives of the trade unions, the employers' organisations and the Department of Labour Relations. Their proposal was sent to the Council of Ministers, which could accept, reject or modify it (Mitsis, 2019).
6. For security guards, the minimum wage was €4.90 per hour upon hiring and €5.20 per hour after six months of continuous employment. For cleaners in corporate buildings, the hourly minimum wage was €4.55 upon hiring and €4.80 after six months (see also Table B.1, in Christofides and Mitsis, 2023).
7. According to Christofides (2019), the collective bargaining agreements of the private unionised sector, contain so-called 'minimum indicative starting salaries' for about 180 occupations. These minima range from €663 per month for assistant waiters, to €1991 per month for head cooks.
8. A detailed description of the occupations in the hotel industry, where the minimum wage legislation was extended to in 2020, is included in Table 2 in Christofides (2021).
9. The European Union adopted the European Pillar of Social Rights (EPSR) in 2017 and an Action Plan (2021) which provides that "adequate minimum wages shall be ensured, in a way that provide for the satisfaction of the needs of the worker and his/her family in the light of national economic and social conditions, whilst safeguarding access to employment and incentives to seek work." Also, in October 2020, the European Commission proposed a directive seeking to improve the adequacy and increase the coverage of MW, while also strengthening collective bargaining as the main instrument to ensure fair wages and decent working conditions.

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CHILD POVERTY IN EUROPE: TRENDS, DETERMINANTS AND POLICIES

DIONYSIS BALOURDOS[*] and MARIA PETRAKI[**]

ABSTRACT

This paper aims to descriptively analyze child poverty, across Europe. Various concepts are reviewed: monetary approach, material deprivation, focused, human-rights and multidimensional approaches. Results indicate large disparities by education level, immigrant background and the relation of parents with the labor market. The severity and the persistence of poverty among children tend to be high where the incidence of poverty and the at risk of poverty or social exclusion are also high (Bulgaria, Romania, Italy, Spain). All indicators were narrowest in Finland, Denmark and Slovenia. When child specific material deprivation rates are analyzed, the differences are even more striking. A better targeting is necessary for decreasing child poverty.

Keywords: *Child Poverty, Child Specific Material Deprivation, Child Focused Approach.*

1. INTRODUCTION

Child poverty is a matter of intense concern in Europe and globally. This is not solely due to the fact that an alarmingly high number of children are affected. We find substantial evidence that, children growing up in poverty experience many disadvantages which accumulate across their life cycle. Commonly, they experience worse outcomes than children from a wealthier family in virtually every dimension including physical and mental health, educational attainment, labor market success later in their life etc. Chaudry and Wimer (2016) has highlighted the harmful effects of child poverty, arguing that: "*One of the reasons we care about the childhood poverty rate beyond its role as an indicator, is the strong link between family poverty experienced during childhood and the well-being and outcomes for children, including into young adulthood. Many studies over the past several decades have documented the significantly worse outcomes and conditions across various measures of child health, education, and behavior for children who live in poor families and their experience during childhood and into adulthood compared with nonpoor children*".

Addressing poverty, for both children and adults, requires a clear identification of the nature and causes of the problem, as well as an understanding of how it is experienced. There is no single way to conceptualize and measure poverty. The

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analytical results of poverty research can depend on the concepts and measures chosen on either theoretical or pragmatic grounds (Yang, 2017).

In Europe, child poverty is a problem for the majority of Member States but it is higher in some of the most deprived and newer Member States including Greece, Spain, Romania, Italy and Slovakia but also France and Luxembourg amongst others. Available data show that the poverty rate for children (less than 18 years) is higher than the national average and under certain conditions higher than any other age group. Newhouse, Bacerra, and Evans (2016), affirm that poverty rates for children are higher at any poverty line while compared to adults, they are twice more likely to experience its effects.

A big debate about the Sustainable Development's Goal 1 revolves around the better understanding of the extent, nature, causes and consequences of child poverty, reinforcing the shift towards multidimensional definitions of poverty. The indirect reference to children[1] raises the question of how to deal with child poverty, what are the similarities and/or the differences from adult poverty and what could be an appropriate definition and measurement highlighting a distinct child focused policy design and implementation (Bessell, 2022).

This paper examines poverty and disparities2 in deprivation as they affect children in the EU, using single monetary, non-monetary and multidimensional -composite indicators. Its main purpose is fourfold: (1) to review current debates that conceptualize and measure child poverty; (2) to describe the evolution of child poverty in the EU in a comparative perspective; (3) to highlight on the main risk factors for children and households at risk of poverty; and (4) to discuss possible policy approaches.

Unquestionably, describing and analyzing child poverty remains a methodological challenge. This is attributed mainly to its multidimensional character, while others criticize the bulk of different definitions and indicators or measures making it difficult to reach a single methodological perspective (Ben-Arieh and Frønes 2011, Minkkinen, 2013; O'Hare and Gutierrez, 2012; Biggeri and Cuesta, 2021).

In the next section we discuss shortly and describe the main theoretical and methodological considerations of child poverty including measures relying on the relative income concept and those describing aspects of material deprivation that are used widely within the European Union. After that, using data from the EU-SILC, we examine the similarities and differences between the EU member states, including also Norway and Switzerland (EEA member countries),[3] by means of selected indicators relevant to the subject area of monetary poverty such as at risk of poverty, at-risk-of -poverty gap, persistent at-risk- of- poverty rate, child poverty before and after social transfers etc.[4] It follows with a short description of the main drivers that sustain the prevailing threats and inequalities that force children living in poverty including the relation of parents with the labor market, the size and composition of the household, the level of parental education and children with an immigrant background or having a

disability. It is also investigated if there are different group/clusters of countries classified according to both child poverty /material deprivation levels and different policy potentials. The last section summarizes the results of the study.

2. CHILD POVERTY: A SHORT REVIEW

There is no single, commonly accepted, definition and measurement of poverty, despite their importance for policies to improve well-being of children and families affected. The existing differences in definitions and measurement represent not only different ways to collect and analyze statistical data, but also lead to distinct approaches and policies in combating poverty. All prevailing definitions and descriptions consent that poverty is a complicated societal issue.

Although, income continues to play an important role in measuring poverty, research is increasingly recognizing the multidimensional nature of poverty, combining monetary with non-monetary measures that capture low socioeconomic status and material deprivation (Nolan and Whelan, 2007; Tomlinson and Walker, 2009; Balourdos, 2014).

The European Union exercise a relative definition, suggesting that poverty is not only a state or a condition in which a person lacks enough resources to provide the necessities of life. As it is stated (EEC, 1985): '*the poor shall be taken to mean persons, families and groups of persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live*'. This conceptualization has been decidedly influential in poverty studies and policies. Gordon (2006) states that this is clearly in line with Townsends (1970) relative concept referring to poverty not as some 'absolute basket of goods' but in terms of the minimum acceptable standard of living applicable to a certain member state and within a person's own society.

The main features or underlying qualities of the aforementioned definition that have influenced poverty research in recent decades are: the multi-dimensional nature of poverty; the focus on the broader concept of 'resources' rather than just 'income' including for instance 'inability to participate in society to a normal standard'; and the reference not just to families and groups but also to individuals living in poverty (Saunders, et al., 2018). Commonly in the EU the number of poor are measured indirectly in terms of not having enough monetary resources or directly by the enforced lack of access to the resources required to enjoy a minimum standard of living and participation in the society one belongs to. In the first approach, welfare pertains to individuals and hence poverty meant a welfare shortfall, becomes an individual-level concept typically measured with household-level income data. As such it can be described as "*having less than an objectively defined absolute minimum*" (absolute approach); "*having less than others*" (relative approach); and

"*feeling you do not have enough to get along*" (subjective approach) (Förster, Tarcali and Tilll, 2004; Hagenaars and De Vos, 1987).

The first two considerations capture different facets of income poverty, but formally, they only differ by the type of poverty line they use to discriminate the poor from the non-poor. Absolute poverty is described with a lack of resources to cover basic needs of life. It refers to a condition in which individual's or household's resources remain below a fixed poverty line that is considered to cover the costs of basic consumption necessities (Arndt, Mahrt and Tarp, 2017; Decerf, 2022). Particularly, the real value associated to an absolute poverty threshold should be the same in all societies. The absolute poverty line has been used particularly in settings in which the focus is on reaching minimum living standards for a large share of the population, including children.

In the EU, the main measures of poverty are relative corresponding to a part of the population which lives with an income below the poverty threshold. Besides, significant limitations and the fact that poverty thresholds used to identify the poor are more or less arbitrary, income has dominated to the measurement of poverty and has influenced the definitions that have been formulated and used every now and again (Spicker 2007, p. 32). Its strength lies primarily to the sensitivity and responsiveness to short-term changes in living standards in a particular society. Bessel (2022), considers that income dominance has been a particular problem in analyzing the causes and understanding the nature and impact of child poverty. This has influenced, shaped and drastically limited the nature of policy responses that tended to focus on household income, rather than children themselves.

However, concerns have been raised over a sole reliance on income-based measures, for identifying those in risk of poverty. These concerns include the limited ability of income-based measures to capture different needs, standards of living and patterns of consumption, to take account of non-cash benefits and accumulated debt, and to capture economic fluctuations in periods of rapid economic change (Watson et al., 2017; Whelan et al., 2019).

Additionally, to income, material living standards, and material deprivation particularly, represent a direct measure of child poverty providing information that is different to that provided by indicators of relative monetary poverty. Townsend, (1987) defined 'poverty' as a lack of command of sufficient resources over time and "deprivation" is an outcome of poverty which is a relative phenomenon encompassing both a lack of material goods and social activities due to an inability to afford them.

Once and again, relative deprivation quantifies poor living conditions directly using non-monetary variables/ indicators of living standards and goes beyond traditional measures of relative poverty (low financial-monetary resources). Adults or children unable to afford certain basic items are considered to be materially deprived, emphasizing further the inadequate social participation and integration of the poor into the mainstream society. Thus, a person or a child could be considered deprived to the

extent that he or she falls below the level attained by the majority of the population or below what is considered socially acceptable (consensual poverty). This involves comparing the living standard outcomes achieved with those having a poor living standard and identifying poverty on this basis. This switch in approach from one that examines the resources available to one that concentrates on the outcomes achieved represents an important advance in how poverty is conceived and measured (Saunders, et.al, 2018; Ringen, 1987). Material deprivation indicators have often been recommended as a rigorous scientific approach to the measurement of poverty with targets based, in part, on a measure of material deprivation alongside low income (Pantazis, Gordon and Levitas, 2006).

3. CHILDREN'S HUMAN RIGHTS-BASED PERPECTIVE

In recent years, the adoption of a multidimensional poverty approach and the use of composite indicators with reference to children is driven by the United Nations commitment to a human rights approach, shaped mainly by Article 27 of the Convention on the Rights of the Child (CRC). The international definition of child poverty set by the UN General Assembly in 2007 is rooted in the CRC and is multidimensional: '*Children living in poverty are deprived of nutrition, water and sanitation facilities, access to basic health-care services, shelter, education, participation and protection and that while a severe lack of goods and services hurts every human being, it is most threatening and harmful to children, leaving them unable to enjoy their rights, to reach their full potential and to participate as full members of society*'.

This definition, promotes the measurement of child poverty that is rights based and child centred, across a range of domains of their lives. Indeed, the human rights perspective contend that poverty harms children's development, leading among others, to lower income, education, health levels and access to decent employment in adulthood. It is – a denial of their human rights and a violation of the CRC. Poverty is treated in a multifaceted perspective, meaning that its impact stems far beyond inadequate income and material resources, indicating a denial of rights, choices and opportunities (Nolan, 2020; Nolan and Pells 2020).

Shamrova and Lampe (2020) assert that the integration of the children's rights approach to studying child poverty proposes a greater focus on children themselves as the individuals who determine what is adequate living (child centric) and a focus on material deprivation rather than income-based poverty in research and policy design. This view is also strengthened by the fact that child poverty affects children's lives and for that reason their involvement in how poverty is conceptualized, measured and addressed is strongly indicated (Article 12, Rights to be Heard).

This innovative perspective combines the latest theoretical initiatives with empirical efforts that place children at the centre, providing evidence that has

relevance and meaning to children, assisting evidence-based policy design and delivery, to children's and young people's needs.

Main (2013 and 2019), distinguish between three different approaches, assessing the extent to which children's experiences and views are represented. Household-centric or adult- centric approaches where children's experiences of poverty is overseen. Research is largely quantitative, concentrated on views of the adults while income and household-based measures produce estimates of the rate and the number of children in poverty. Children are also presumed to be incapable of understanding and evaluating their life circumstances thus resulting in parents -carers speaking as proxies.

In child-centric perspectives practically, adults identify items and activities in multiple domains, deemed necessities for children. The resulting indicators can be used alone or combined with household income to provide insight into child poverty overall and in various domains (Main and Bradshaw, 2014; Main, 2019).

The third approach is based on child poverty-deprivation measures which are not only child-centric, but draw on child-derived poverty indicators based mainly on qualitative research into children's own experiences of poverty. It appears that a child-derived measure of deprivation can offer greater insight into the impact of material circumstances on the subjective well-being of children than conventional poverty measures allow (Main, 2019; Gross-Manos and Ben Arieh, 2017; Main, 2013).

Child centric approaches are contrasted to household-centric approaches because they provide direct insight into child-specific rather than household-specific resources or deprivations. Saunders et al. (2019) refer to this as a child-focused approach that involves conducting research with children to ensure that the measures capture their views and their different experiences.

Typically, child-centered approaches acknowledge that child poverty is a multidimensional issue relying methodologically heavily on Townsend's (1979, 1987) theory of relative deprivation and the subsequent 'socially perceived necessities' approach (Gross-Manos, 2015).

4. LIVING CONDITIONS FOR CHILDREN IN EUROPE - POVERTY AND SOCIAL EXLUSION: EMPIRICAL FINDINGS

The evolution of child poverty in Europe is described on the basis of a beyond income-based approach because material deprivation and other more complex composite indicators surely vary from country to country, presenting a more complete view of the phenomenon.

We divide all the possible influences on the child poverty indicators into three broad sets- the family, the labor market, and income transfers from the state—and present a series of estimates of the change in child poverty due to each of these forces.

The analysis offers a set of country-specific results, but also attempts to draw general lessons, which are summarized and discussed in the concluding section of the paper.

The emphasis is more or less on monetary child poverty and material deprivation indicators. It stated that taken together, these two different measures offer the best currently available picture of child poverty across EU countries (UNICEF Innocenti Research Centre, 2012; UNICEF Innocenti Research Centre, 2013). Besides both are constituted parts of the official EU headline measure of poverty grounded in the understanding of poverty as multidimensional: the 'At Risk of Poverty or Social Exclusion' (AROPE). The analysis that follows, is basically descriptive and comparative based heavily on poverty and deprivation indices, using data from the EU Statistics on Income and Living Conditions (EU-SILC).

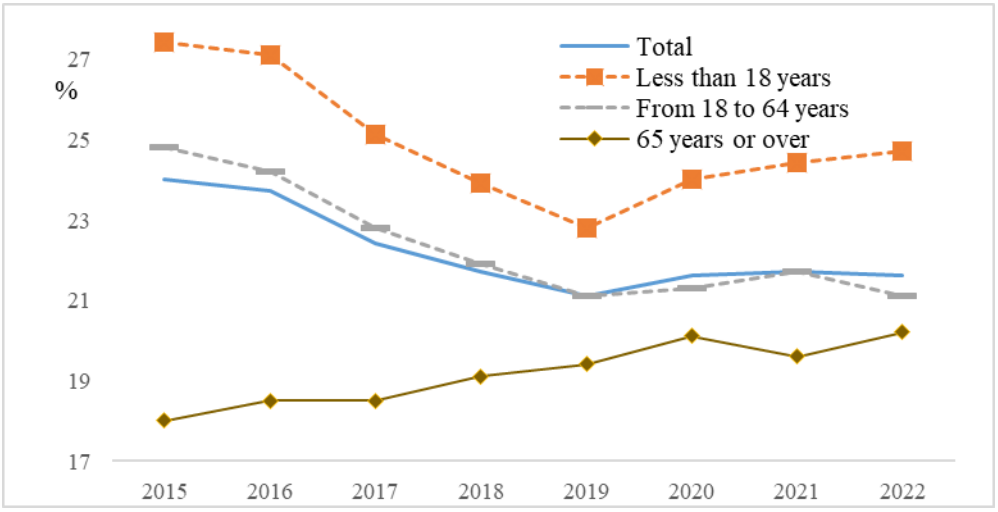
4.1. Children at risk of poverty or social exclusion

The revised at-risk-of-poverty or social exclusion rate (AROPE) is the main indicator to monitor the h*eadline target* on *poverty* and *social inclusion* of the *European Pillar* of *Social Rights*[5]. It reflects the share of the population which is at-risk- of- poverty (AROP)[6] and/or severely materially and socially deprived (SMSD)[7] and/or lives in a household with very low work intensity (LWI)[8].

In 2022, 24.7 % of children (aged less than 18 years) in the EU-27 were at risk of poverty or social exclusion, compared with 21.1 % of adults (aged 18-64 years) and those aged 65 years and over (20.1%). Children were also more affected than the overall EU population, with 21.2 % living in households at risk of poverty or social exclusion. In line with the overall EU trend, the poverty or social exclusion rates for both groups (overall EU population and children) have decreased since 2015 although it increased slightly for those 65 years and over. During the last years (2021-2022) the relative slight increase in the percentage of the child AROPE indicator is due to the increase in the share of children suffering from SMSD (8.4% in 2022 from 7.5% in 2021), despite the decreases in the share of the children in low work intensity (7.6% in 2022 from 8.3% in 2021) and the AROP (19.3% in 2022 from 19.5% in 2021)[9].

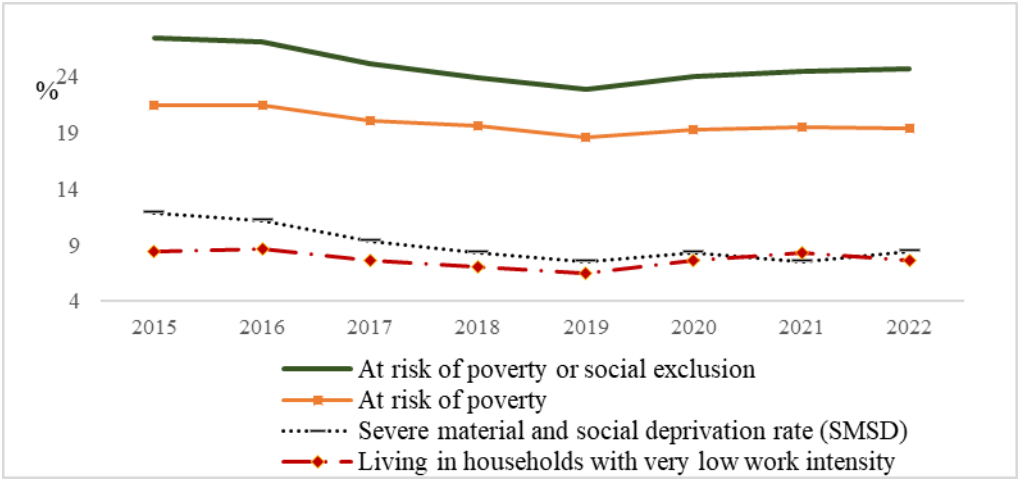
Commonly, children are more exposed than any other age group or for the EU-27 population as a whole. In 18 out of 27 countries, child poverty or social exclusion rates exceeded the rates for the total population. In Hungary, Estonia, Latvia, Denmark, Slovenia, Netherlands Lithuania, Croatia and Finland children are less at risk of poverty or social exclusion than the total population. Among Member States, the highest shares of children at risk of poverty or social exclusion in 2022, were reported in Romania (41.5%), Bulgaria (33.9 %) and Spain (32.2 %). Conversely, the lowest shares were found in Slovenia (10.3 %), Czechia (13.4 %) and Denmark (13.8 %). In the majority of the EU countries, except Germany, the rate decreased during the period 2015-2022 (Figures 1- 4).

FIGURE 1: SHARE OF CHILDREN AT RISK OF POVERTY OR SOCIAL EXCLUSION BY AGE GROUP, EU-27 (%), 2015-2022



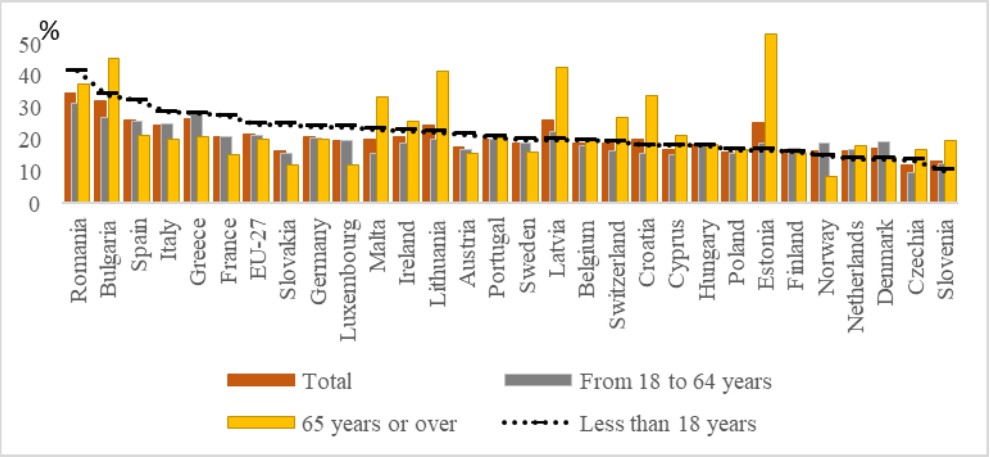
Source: Eurostat. Authors' elaboration from EU-SILC.

FIGURE 2: SHARE OF CHILDREN AT RISK OF POVERTY OR SOCIAL EXCLUSION BY DIMENSION, EU-27 (%), 2015-2022



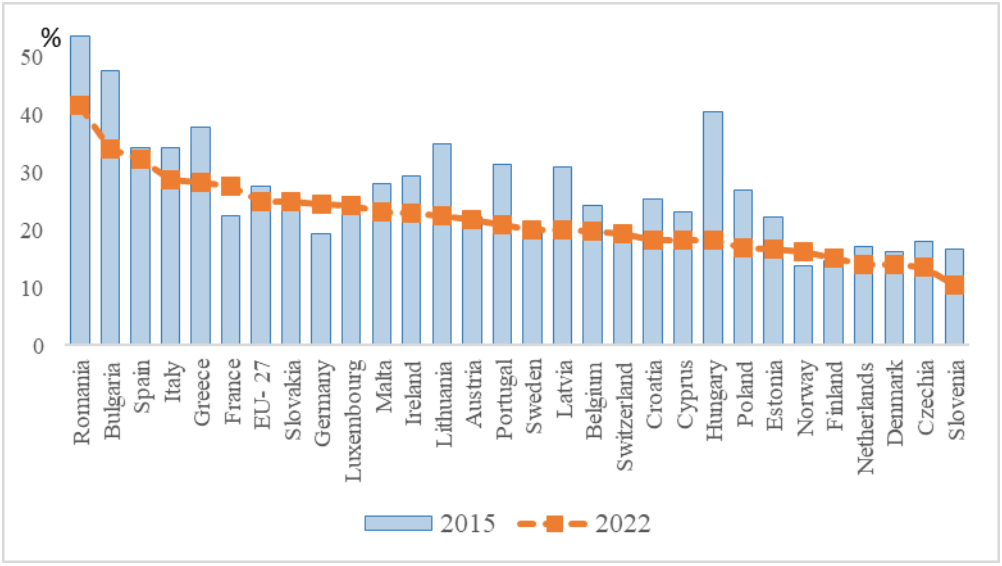
Source: Eurostat. Authors' elaboration from EU-SILC.

FIGURE 3: SHARE OF PERSONS AT RISK OF POVERTY OR SOCIAL EXCLUSION BY AGE GROUP (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

FIGURE 4: SHARE OF CHILDREN BELOW 8 YEARS OLD, AT RISK OF POVERTY OR SOCIAL EXCLUSION (%), 2015 and 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

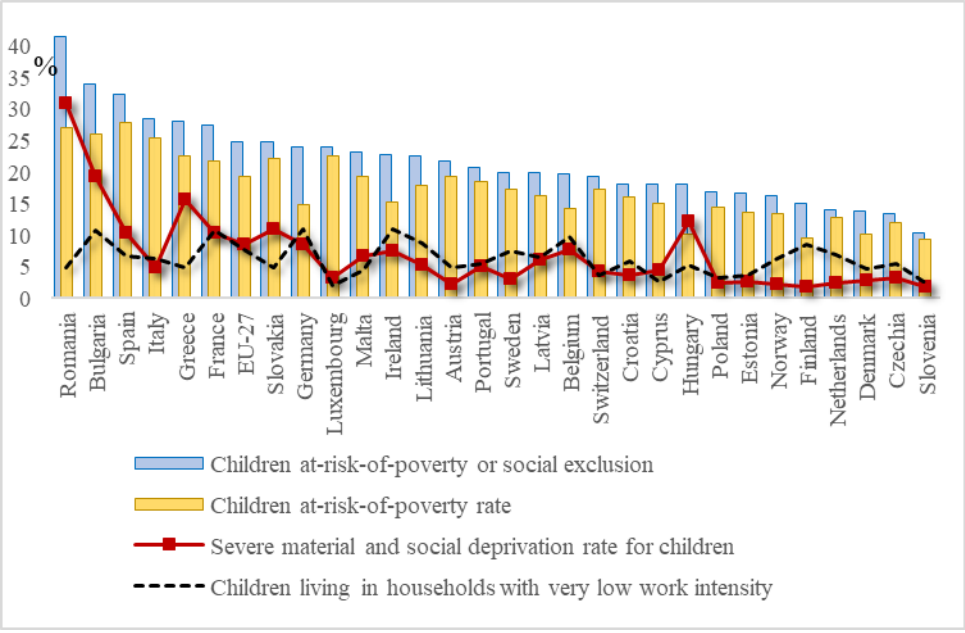
Disaggregating the three components of the AROPE indicators (AROP, SMSD and LWI), we find that in 2022 in the EU-27 more than one in five children (19.3%) are at-risk of poverty, 8.4% experience severe material and social deprivation, while 7.6% live in households with very low work intensity.

Further data elaboration shows that there are broadly groupings of countries, starting mainly with Spain, Italy and Greece (southern countries), together with Romania, Bulgaria having the highest child poverty rates (between 22% and 27.8%). In this group of countries, the child SMSD rate is also highest (30.8% in Romania, 19.2% in Bulgaria, 15.5% in Greece) or moderate high (10.3% in Spain and above the EU-average, 8.4%).

One other group of countries comprises mainly the Nordic countries with child poverty rates around 10% (Finland and Denmark) or above 10% but below the EU-average (Norway and Sweden). These countries have the lowest child SMSD rates[10]. Other countries such as the Netherlands or Czechia, have also similar rates and may join this group.

The middle group includes countries with poverty and SMDR rates exceeding or being slightly low-er than the EU average rates (Figure 5).

FIGURE 5: SHARE OF CHILDREN BELOW 18 YEARS OLD, AT RISK OF POVERTY OR SOCIAL EXCLUSION BY DIMENSION (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

Low work intensity is most common in households with a single parent and one or more children. In 2022 Ireland had the highest rates (10.9%), followed by Germany, France and Bulgaria (all above and near 10%); Luxembourg, Cyprus and Slovenia had the lowest (below 2.5%).

It is obvious that 'at risk of poverty' rate, is the largest problem in the EU and its Member States (most children counted as facing one of the three risks in AROPE fall under that category) with the only exception of Romania were the SMSD rate is highest[11].

4.2. Key aspects of monetary child poverty

One convincing academic discussion focus on the fundamental question of how to measure poverty risks among adults, youths, and children and how to interpret statistical data. Corak (2006) recognizing that child poverty is a multifaced issue state that in high income countries families are the primary provider of resources for children. Therefore, the use of an income-based measure is a good proxy adding that alone it does not capture all dimensions that child poverty entails and should be complemented by other relevant indicators (Corak, 2006).

Likewise, Raitano et al. (2021) state that measuring poverty – regardless of the poverty concept used – does not imply merely counting how many individuals/households are below the poverty line (i.e., the so-called poverty incidence), since further dimensions of poverty, i.e. its intensity (how far the poor are from the poverty line) and inequality (how different are the conditions of the poor) are crucial to compare the characteristics of poverty across countries and to derive sound anti-poverty policy suggestions.

Thévenon, et al. (2018), argue that the risk of child poverty varies with the employment status and social background of their parents, and with family structure. They underline the employment status of parents, as the most significant factor in determining child poverty at the household level, while the share of children with a single parent among poor families is of increasing importance in most countries.

For UNICEF (2012), child poverty should be monitored in three dimensions – asking not only *how many* children fall below national poverty lines but *how far* and for *how long*, Moreover, Eurostat's (2023a) methodological framework on monetary poverty, make a clear distinction between indicators relevant to the subject area of monetary poverty (At-risk-of-poverty rate and thresholds, poverty gap, persistent at-risk-of-poverty rate, at risk of poverty before and after social transfers etc.) and dimensions (age group, household type etc.).

These supplementary indicators are of multidimensional structure and can be analyzed simultaneously along several dimensions. In addition, they provide a means to assess the adequacy of social transfers in terms of their capacity to lift people out of poverty; yet not every country can afford social spending and reasonable adequacy.

Based on these briefly described methodological hints, we descriptively present data on monetary child poverty measures namely the three I's of poverty: incidence, intensity, and inequality, including also additional measures used and suggested from the methodology applied by Eurostat (2023a), including the relative median at-risk-of-poverty gap (severity of poverty), the persistent at-risk-of-poverty rate, the housing cost overburden rate and the -risk-of-poverty rate before and after social transfers.

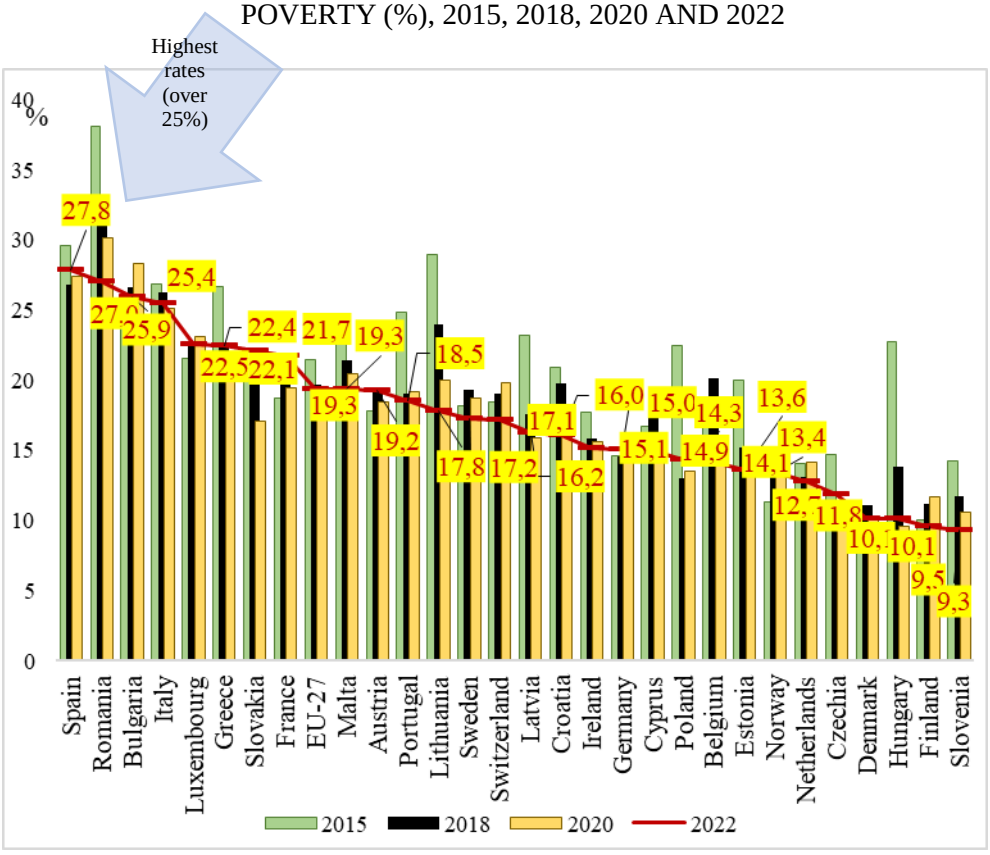
4.3. Facts and descriptive statistics on child poverty in Europe

During 2015-2022 the poverty risk for children in the European Union as a whole decreased almost by one percentage point from 17.4% to 16.5%. On average, about one child in 6 lives in poverty. Subsequently, during the same period, the same trend was found in the great majority of the Member States. The largest decreases in the AROP since 2015 were in Hungary (-12.6 pp)[12], Romania and Lithuania (-11.1 pp each), Poland (-8.1 pp) and Latvia (-7 pp). Thirteen of the remaining Member States including also Switzerland had increases ranging from -0.4pp in Denmark to -6.4 pp for Estonia. However, in total, six Member States and Norway had moderate increases ranging from *+0.4 pp for Germany +3pp for France (Figure 6).*

Nevertheless, the at-risk-of-poverty rate among children varies significantly across the European countries. Regarding the overall situation in 2022, children face the highest risks in Spain (27.8%), Romania (27%), Bulgaria (25.9%) and Italy (25.9%). They were closely followed by Luxembourg, Greece, Slovakia and France (all around 22%, and above the EU-27 average, 19.3%). In contrast, the lowest rates were found in Slovenia (9.3%), Finland (9.5%), Denmark and Hungary (10.1% both). The respective rates for continental Europe and many of the new Member States are placed mostly in the middle. Essentially, the EU average seems to represent a relative threshold for sorting out ad-hoc and interpreting the countries (Member States), according to their level of child poverty (Figure 6).

The risk-of-poverty among children differs, with the youngest children less likely to live under the poverty line. In 2022, in the EU as a whole, children under the age of 6 have a poverty rate of 17.7%, compared with 18.6% for children between ages 6 and 11 and 21.2% for those between ages 12 and 17. This general pattern is to be seen in the majority of Member States, though there is a great diversity of risk patterns by age group in some cases. The relative risk of poverty for the youngest tends to be lower than those between ages 12 and 17 or those below the age of 18, mainly in those countries that have a high risk of poverty for all children (e.g., Romania, Bulgaria, Spain, Italy, France, Luxembourg, Greece and Malta).

FIGURE 6: SHARE OF CHILDREN BELOW 18 YEARS OLD, AT RISK OF POVERTY (%), 2015, 2018, 2020 AND 2022

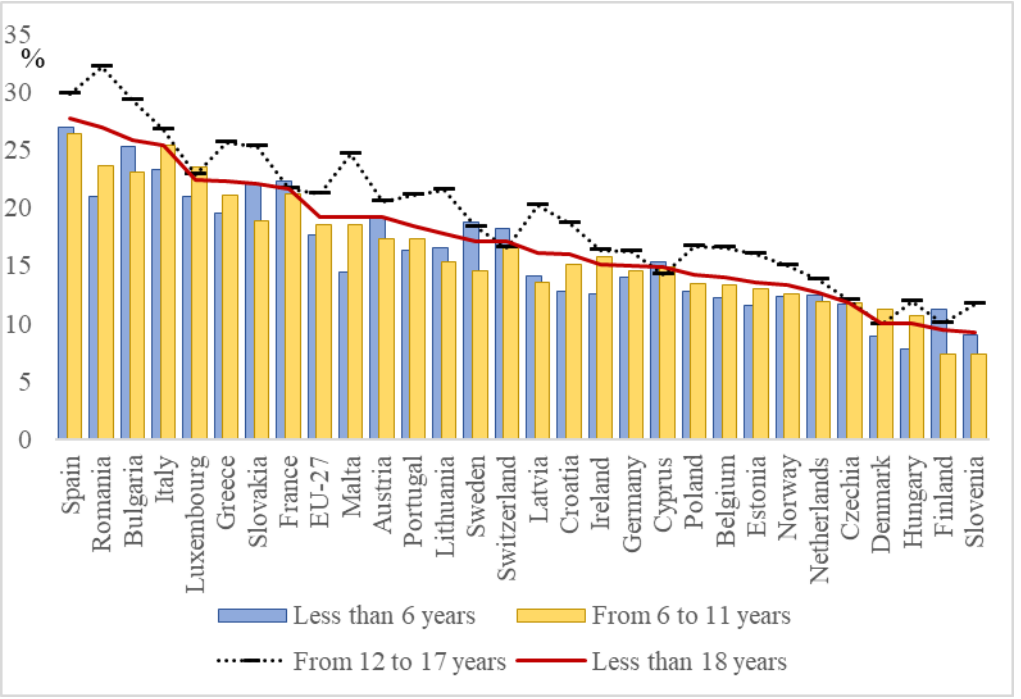


Source: Eurostat. Authors' elaboration from EU-SILC.

Children in the middle age group (6–11) face the lowest relative risk of poverty in countries with low national aggregate figures for children (Slovenia, Finland, Denmark, Hungary, Czechia, Netherlands), and also in Belgium, Estonia and Norway. The risk of poverty is highest among children aged 12-17 years. For this group highest rates are found in Romania (32.2%), Spain (29.9%), Bulgaria (29.3%), Italy (26.8%), Greece (25.7%), and Slovakia (25.3%). Lowest rates in Denmark and Finland (below 10%) (Figure 7).

Those differences are associated, in part, to relevant policies that outweigh the higher expenses for younger children and the lower earning of parents during their early careers i.e., when their children are younger. Besides, the choice of modified OECD equivalence scale might affect the estimates, giving a greater weight to older children and therefore implying a lower equivalent income for them.

FIGURE 7: SHARE OF CHILDREN BELOW 18 YEARS OLD, AT RISK OF POVERTY BY AGE GROUP (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

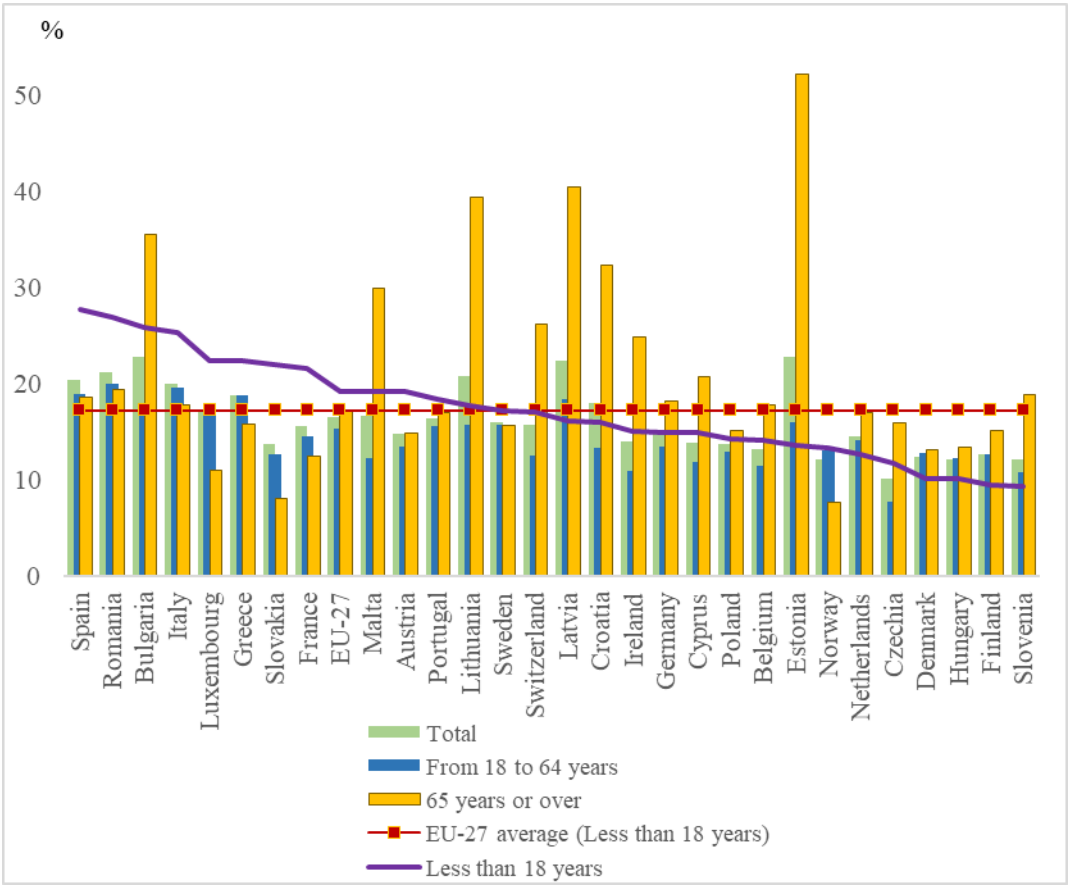
Typically, the relative risk of poverty for a specific age group is related to the risk for others. In the case of children, their risk of poverty is, to some extent, conditional on that of adults, mainly the elderly (Gábos, 2013). As shown in Figure 8 in 2022, 19.3% of children (aged 0-17) in the EU-27 were at risk of poverty compared to 15.3% of adults (18-64) and 17.3% of the elderly (65 years or over). Thus, children were the population age group at the highest risk of poverty. This was the situation in more or less ten Member States[13] and Norway.

In contrast the elderly, were most at risk[14] in Estonia (52.3% vs 13.6%), Latvia (40.5% vs 16.2), Lithuania (39.8% vs 17.8%), Bulgaria (35.6% vs 25.9%), Croatia (32.4% vs 16%), Malta (30% vs 19.3%), Cyprus (20.8% vs 14.9%) and Switzerland (26.3% vs 17.1%). They were closely followed by Poland, Denmark, Germany, Hungary, Belgium, Czechia, Netherlands and Finland. In Slovakia Luxembourg France Spain Italy Romania Greece and Norway were the adults showed higher risks than the elderly. However, child poverty ranked first highest in nearly all of them. Netherlands and Slovenia perform as well as Nordic economies (Denmark Finland) in

avoiding child poverty (lowest rates in comparison with the total or the other age groups).

Figure 8 shows a different interpretation of the relative performance of governments. Its premise is that, in a society committed to providing special protection for children, the child poverty rate would be lower than the overall poverty rate and/or other age groups. As it is can be observed, in 2022 children were often more likely to be poor than the population as a whole. In 18 out of 27 Member States, but also in Switzerland and Norway child poverty rates exceeded the total -national poverty rates. In certain cases, (e.g. Spain, Romania, Bulgaria, Italy Greece, Luxemburg Slovakia, France), the national child poverty rates exceeded the EU child poverty average (17.3%).

FIGURE 8: SHARE OF POPULATION AT RISK OF POVERTY BY AGE GROUP (%), 2022



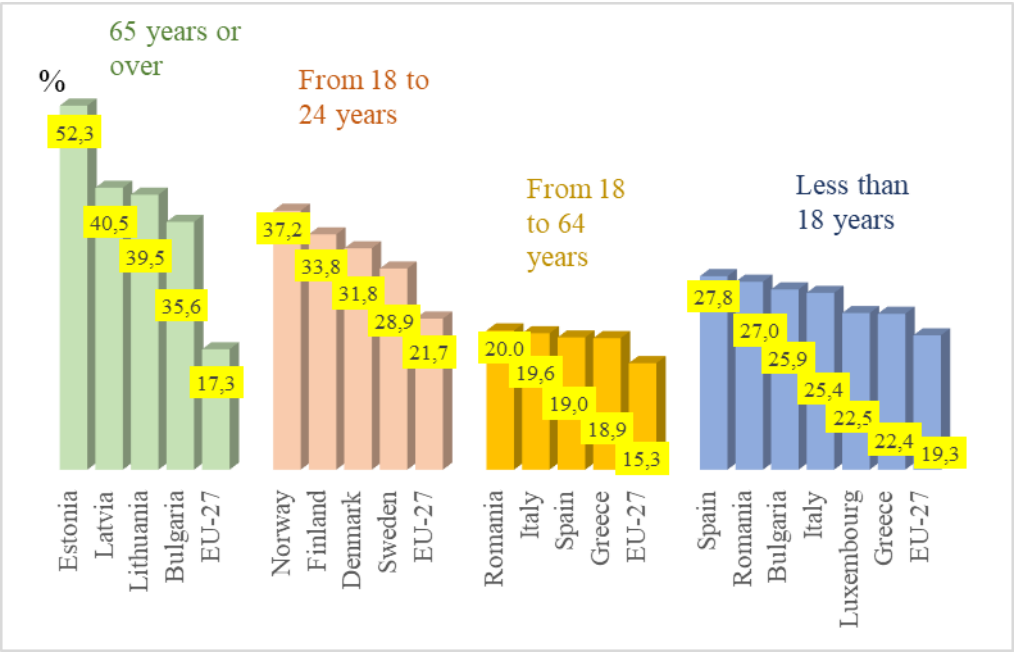
Source: Eurostat. Authors' elaboration from EU-SILC.

Bulgaria, Greece, Austria, Luxemburg, Italy, Romania, France, Slovakia, and Spain also had child poverty rates that were more than 3 pp higher for children than for the total population. In Denmark, Finland Hungary and Slovenia about 10% of children were at-risk-of-poverty (lowest EU rates) and less the risk for the national and the EU average.

In Estonia (+9.6 pp), Latvia (+6.3 pp) and Lithuania (+3.1ps) the rate for the total population was significantly higher than that of the child population. The AROP rates for children and the total population were very alike in Germany, Poland, Belgium, Cyprus, Ireland, Sweden and Norway but this does not necessarily mean that their

rates were among the lowest across the EU-27. Indeed, the AROP rate for children in Sweden exceeded 17% while in Norway it approaches 13.4%. Highlighting to the highest rates among three different age groups (Figures 8-9), we identify three different county clusters. The Baltic countries (Estonia, Latvia, Lithuania) and Bulgaria with the highest poverty risk among the elderly. The Scandinavian countries (Denmark, Sweden, Finland and Norway) with the highest youth poverty risk (18-24 years old) and final Spain, Romania, Bulgaria, Italy and Greece with the highest child poverty rates and persons of working age (18-64 years).

FIGURE 9: SHARE OF POPULATION AT RISK OF POVERTY BY AGE GROUP**:** COUNTRIES WITH THE HIGHEST RATES (%), 2022



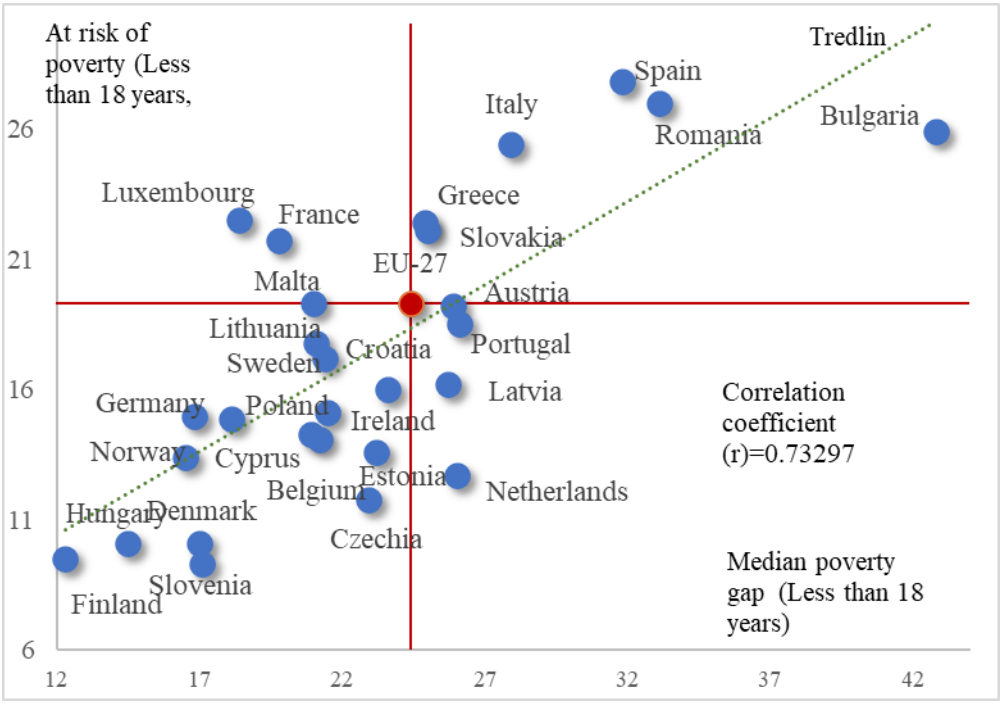
Source: Eurostat. Authors' elaboration from EU-SILC.

The child poverty gap, one measure of the depth or the severity of poverty helps to describe just how poor the poor are. It indicates the extent to which the situation of children at risk of poverty falls below the poverty threshold on average. In policy terms, it indicates the scale of transfers which would be necessary to bring the incomes of those concerned up to the poverty threshold. The poverty gap for children in the EU-27 as a whole in 2022 was 23% lower than the at risk of poverty threshold. According to Eurostat data, this is down by 3.1pp since 2015 and by 1.2 pp since 2021.

The poverty depth for children was highest in Bulgaria (42.8%), followed by Romania (33.1%), Spain (31.8%) and Italy (27.9%). The figures for children are high also for Portugal and the Netherlands (26.1% and 26% respectively). On the opposite side, Finland and Hungary reported the lowest rates (12.3% and 14.5% respectively).

Generally, the at-risk-of poverty gap tended to be high in those Member States where the proportion of children at-risk- of-poverty was highest. This means that children live in deep/extreme poverty as both rates are high e.g., Romania. In fact, there is a definite positive correlation between the at risk of poverty rate of children and the subsequent relative median poverty gap (correlation coefficient: r = 0.73297) (Figure 10).

FIGURE 10: SHARE OF CHILDREN BELOW 18 YEARS OLD, AT RISK OF POVERTY AND MEDIAN AT RISK OF POVERTY GAP (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC; Note: Red lines denote the EU average.

For Sánchez and Navarro (2021), the analysis and prevention of the widespread and persistent phenomenon of child poverty is of particular interest mainly by two different reasons. Firstly, children are the most vulnerable group in terms of increased poverty in the EU, especially during the financial crisis. Secondly, as literature on the welfare state highlights, the social and economic future of a country depends on its

capacity to fight child poverty and social exclusion, since these problems represent a threat to future generations in terms of both economic development and social stability.

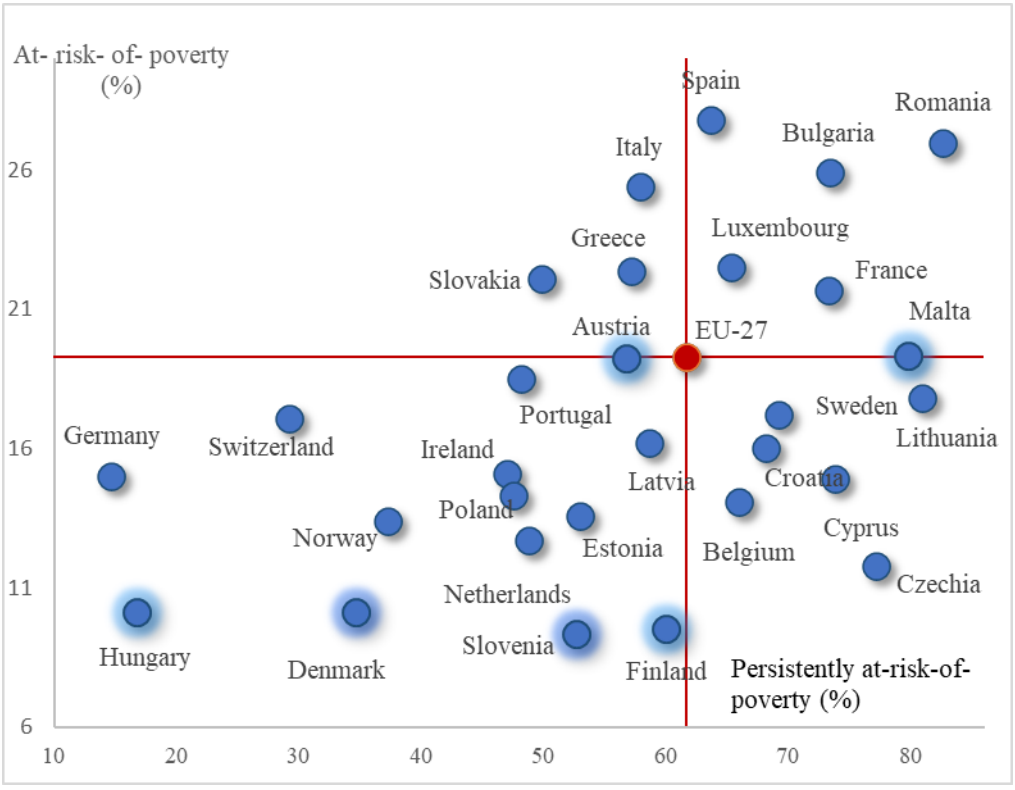
Focusing only on at-risk-of-poverty rate (AROP) present a pure picture of poverty. Countries with a similar AROP may have very different poverty dynamics. The persistent at-risk-of-poverty rate indicator shows the percentage of children living in households where the equivalent disposable income was below the at-risk-of-poverty threshold during the reference year and at least two out of the preceding three years[15].

In 2022, according to Eurostat data the persistent at-risk-of- poverty rate for children in Romania was 22,3%– the highest in the European Union and 10.4 percentage points higher than the EU-27 average rate of 11.9%. Similarly, high rates were also recorded in Bulgaria (19%) and Spain (17.7%). Among EU member states, Hungary has the lowest persistent child poverty rate (1.7%), followed by Germany (2.2% but for the year 2023), Denmark (3.5%), Slovenia (4.9%), Norway (5%), Switzerland (5%) and Finland (5.7%).

The relationship between the persistent child poverty and the share of poor children in a given year (e.g., 2022) can be most clearly seen when considering the ratio between the two rates expressed as a percentage (Figure 11). A ratio of 50% would suggest that half of those children currently in poverty were also poor in at least two out of the last three years. More or less a low ratio in a Member State indicate that child poverty tends to be more temporary compared with the higher rates observed in other European countries (e.g., Hungary, Denmark, Germany). In 2022 Slovenia (9.3%), Finland (9.5%), Denmark (10.1%) and Hungary (10.1%) have almost similar child poverty rates; but close to 53% in Slovenia, 60% in Finland, 34.7% in Denmark and 16.8% in Hungary of these children were persistent poor i.e., are currently in poverty (year 2022) and were also poor in at least two out of the last three years. Thus, child poverty in Hungary and to a lesser degree in Denmark tends to be more temporal, compared with the other countries[16].

In Romania, Lithuania, Malta, Czechia, Cyprus, Bulgaria, France more than 73% of children who were poor in 2022 were also poor in at least two out of the last three years (Figure 11).

FIGURE 11: SHARE OF CHILDREN BELOW 18 YEARS OLD, AT RISK OF POVERTY AND PERSISTENT AT RISK OF POVERTY (%), 2022



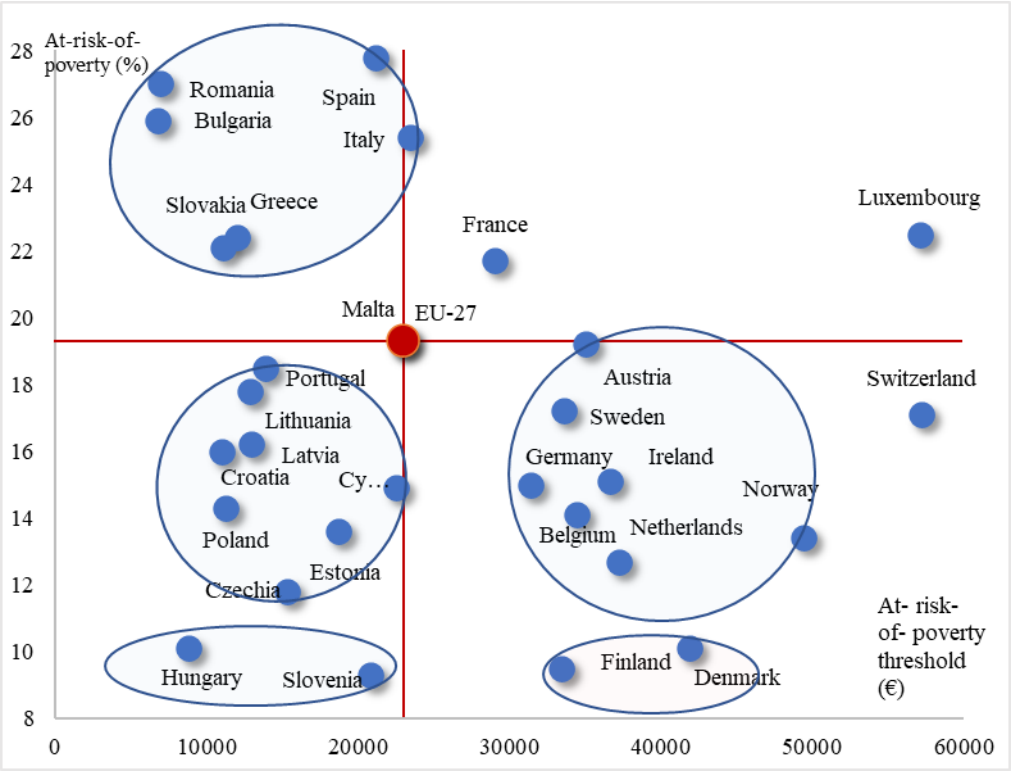
Source: Eurostat. Authors' elaboration from EU-SILC; Note: Red lines denote the EU average. AROP for children in 2022 is based on cross-sectional data, share of persistent poor children is calculated as a share of persistent poor out of all poor (with four years of data).

Countries have, for the most part, similar poverty and persistent poverty rates as their neighbors. For example, the Nordic countries (Norway, Denmark and Finland) have lower than average child poverty and child persistent poverty rates. The Baltic states (mainly Latvia and Estonia) and countries in the south Europe (e.g., Italy, Greece, Spain) and very close Romania and Bulgaria all have higher than average child poverty and persistent child poverty rates. One exception is Hungary, which has lower poverty and persistent poverty compared with neighboring countries.

4.4. What does it mean concretely to be "at risk of poverty"?

Figure 12, examine the child poverty risk associated with the at-risk-of -poverty threshold of a typical household/family (2 parents/adults and 2 dependent children. As seen, the rate of children living in income poor households in such heterogenous countries as Denmark, Finland, Slovenia and Hungary (having child poverty rates around 10%) and Spain, Romania, Bulgaria and Italy (having child poverty rates above 25%) in terms of living standards proxied by the at risk of poverty threshold, hide very different realities. It is a totally different to live just below the poverty threshold in Finland or Denmark than in, for example, Bulgaria or Romania, where the standard of living is significantly lower. Indeed, national income poverty thresholds differ considerably across European countries. In Romania the threshold for a household consisting of two adults and two dependent children is 6946 euros, in Bulgaria 6777 euros whereas it is almost 42000 euros in Denmark and 33442 in Finland (Figure 12).

FIGURE 12: SHARE OF CHILDREN BELOW 18 YEARS OLD, AT RISK OF POVERTY BY POVERTY THRESHOLD (€) OF TYPICAL FAMILIES/HOUSEHOLDS (2 PARENTS/ADULTS AND 2 DEPENDENT CHILDREN) (%), 2022



Source: Eurostat. Authors elaboration from EU-SILC; Note: Red lines denote the EU average.

Thus, Bulgaria and Romania are in particularly difficult situations as these countries combine both very high (among the highest) child income poverty rates and the lowest national income poverty thresholds[17]. It seems that there is a negative relationship, between the poverty threshold and the at-risk-of-poverty rate for children throughout the new Member States (Latvia, Lithuania, Croatia, Poland, Czechia, Slovakia, Slovenia, Hungary, Estonia, Latvia): the higher the at risk of poverty threshold, the lower the poverty risk of children. Opposite is the case of the Southern countries (Greece, Spain, Italy, Portugal): the level of the at-risk-of-poverty rate increases with the poverty threshold value.

These highly important findings are in line with earlier empirical evidence and studies (e.g., Hallaert et al. 2023; Thévenon, et al., 2018; Bárcena-Martín et al., 2015;

Gábos and Tóth, 2011; TARKI, 2010). It seems, that despite intense public debate and policy initiatives at national and European level, the situation has not changed yet significantly.

At the opposite end of the spectrum, Sweden for example combines a monetary child poverty rate which is relatively higher than other Scandinavian countries but below the EU average (17.2% vs. 19.3%). However, country's poverty threshold (33600 euros) is relatively high, a combination which is reflected in the extremely low percentage of children living in severe deprivation.

This type of relative indicator/s does not measure absolute wealth or poverty, but low income in comparison with others living in the same country, which in itself does not necessarily imply a low standard of living. For that reason, "w*hen comparing income-poverty rates based on a national threshold with deprivation rates based on a common set of (equally weighted) items, we compare approaches that differ in two respects. Firstly, there is a change of concept (income versus deprivation); secondly, there is a move from a national based measure to an EU-wide criterion*" (Fusco, Guio and Marlier, 2010). These results clearly highlight the added value of looking at both income poverty and material deprivation[18].

Likewise, comparative research has highlighted the differences between countries in the extent to which the state provides important services. In the Nordic countries, for instance, incomes taxes are relatively high, but access to education, healthcare and pensions is provided through the state without the often-high costs to the families who access these services in Liberal economies (Ireland for example).

Besides, social protection measures have a key redistributive impact that helps to reduce the number of children at risk of poverty rate in countries such as Sweden, Denmark, Finland or Norway as compared for example with Romania, Bulgaria, Italy Spain or Greece.

5. THE SIGNIFICANCE OF SOCIAL TRANSFERS IN DECREASING CHILD POVERTY

The challenge of decreasing or even eliminating relative child poverty, along with social exclusion, has been an issue of economic concern for decades in Europe and one of the key targets of contemporary social policy. Indeed, the fight against child poverty has been and still is one of the most prominent aims at the EU policy agenda (Frazer et al., 2020). Between the most fundamental ways to address how public policies may contest child poverty is through social protection policies with the size of social transfer spending recognized in the literature as a key factor in reducing child poverty (Bárcena-Martín, et.al, 2018).

Empirical findings demonstrate that in high income countries both the level of social spending and the level of family transfers matters even though those with universal benefits do better in lifting children out of deep or extreme poverty than

those with targeted programs alone (Daly, 2019; Cai and Smeeding 2018; Thévenon, et. al., 2018; Chzhen 2017).

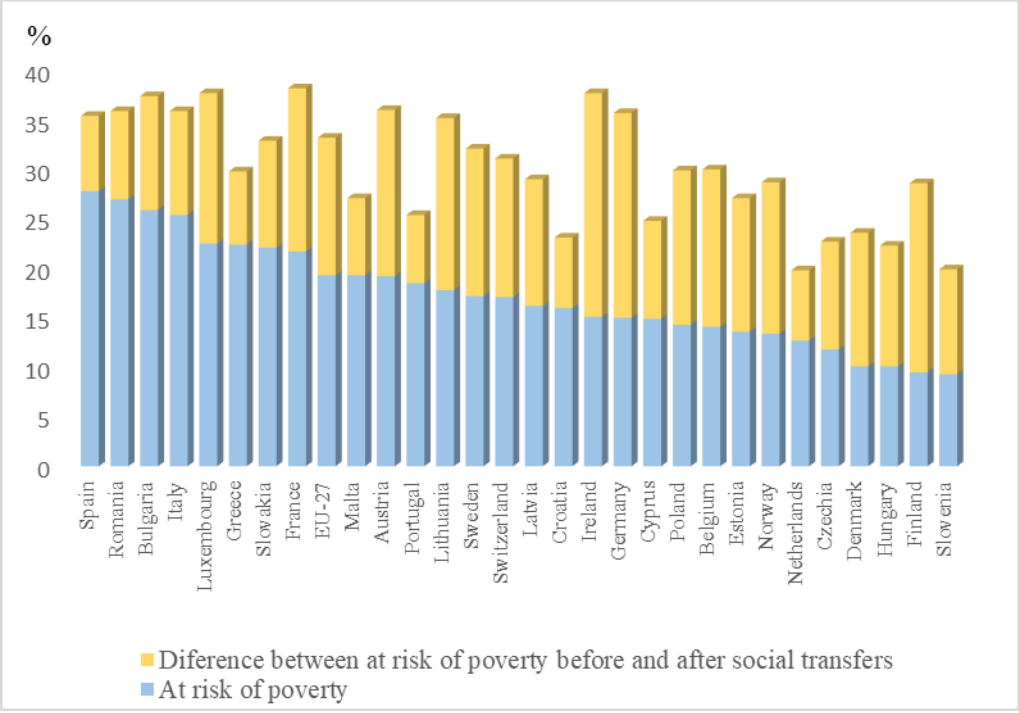
One method of evaluating the success of social protection measures is to compare the level of at-risk-of-poverty rate before and after social transfers (Eurostat, 2014). Three main indicators could be estimated (Caminada, Goudswaard and Koster, 2010; Eurostat, 2011; Miežienė and Krutulienė, 2019; Watson and Maître, 2013):[19]

1. The difference between the at-risk-of-poverty rate before and after social transfers[20] (in percentage points) which is indicative of an absolute antipoverty effect[21].
2. Poverty reduction effectiveness of social transfers: The percentage of the children lifted out of at-risk-of-poverty due to social transfers, as a proportion of the total children at-risk-of-poverty before social transfers, which is indicative of a relative absolute antipoverty effect
3. Targeting effect which is estimated by the division of the difference between the at-risk-of-poverty rate before and after social transfers (absolute antipoverty effect) with social spending ratios (as a percentage of GDP) to see which country targets poverty best per one point of GDP spent on social expenditure (Poverty reduction per point GDP social spending).

The absolute difference between the at-risk-of-poverty rate expressed before and after social Transfers (excluding pensions),[22] measure the hypothetical impact of national social transfers in reducing child poverty risk (Figure 13). The impact, as measured by those children who were removed from being at-risk-of-poverty by social transfers, concern all countries, however to a very different extent.

The lower reductions are seen in Portugal, Netherlands and Croatia and a number of the Mediterranean Member States (Greece, Spain) and even Malta (absolute difference below 8 percentage points). In contrast, the largest reduction is demonstrated in Ireland (from 37.7% to 15.1%, D=22.6pp) and in Germany (from 35.7% to 15.0%, D=20.7pp) while the difference was also high in Finland, Lithuania, Austria and France (with an absolute difference ranging between 16.5 pp to 19.1 pp).

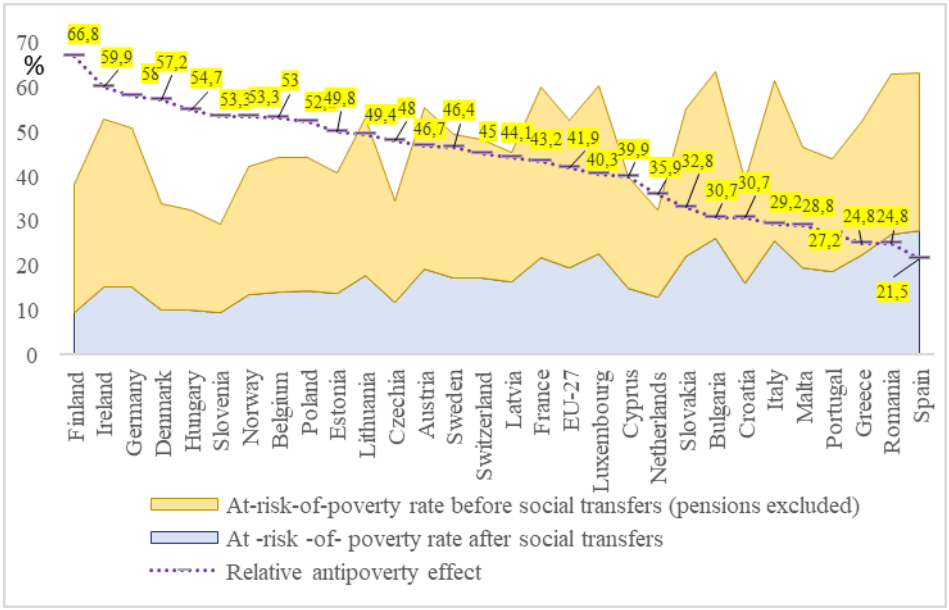
FIGURE 13: AT RISK OF POVERTY RATE BEFORE AND AFTER SOCIAL TRANSFERS FOR CHILDREN BELOW 18 YEARS OLD (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

As shown in Figure 14, the results are similar in calculating relative antipoverty effects. In 2022 (referring to 2021 income levels), the relative impact of social transfers (excluding pensions) on reducing child poverty remained significantly lower than the EU average (at 42%) in some Member States, and notably Spain, Romania, Greece and Portugal (all below or close to 27%). For the 'best performers' in Denmark (57.2%), Germany (58%), Ireland (59.9%) and Finland (66.8%) the rate was significantly high.

FIGURE 14: RELATIVE ANTIPOVERTY EFFECT (PENSIONS EXCLUDED FROM SOCIAL TRANSFERS), FOR CHILDREN BELOW 18 YEARS OLD (%), 2022



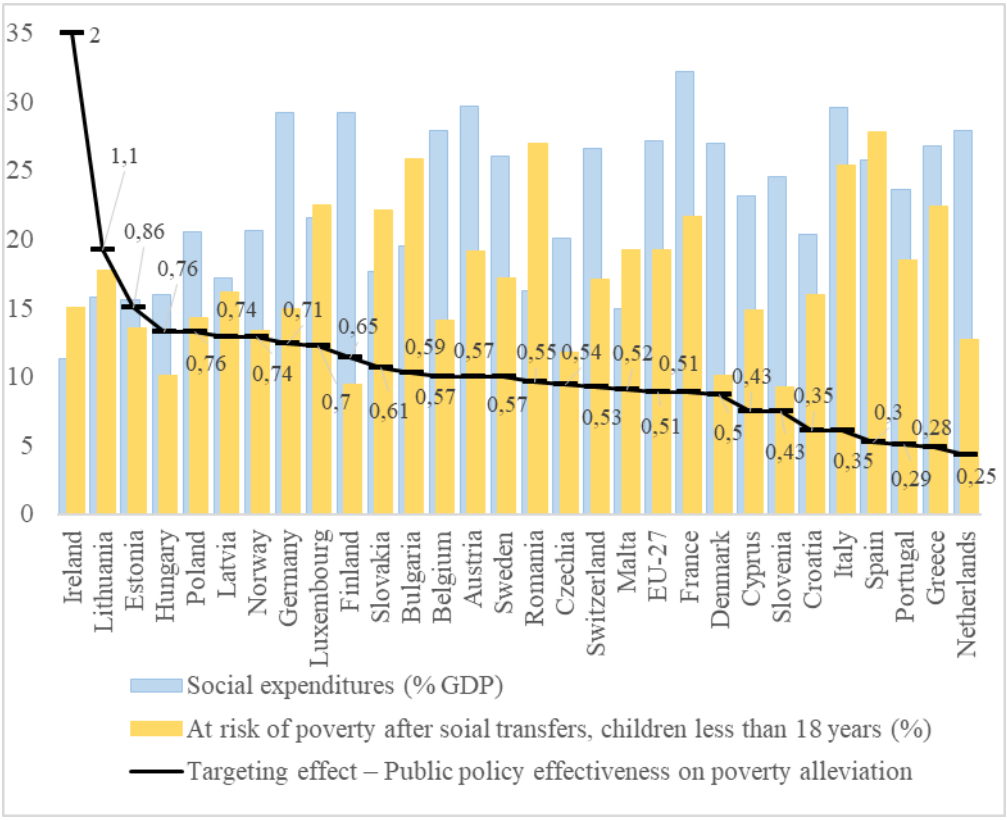
Source: Eurostat. Authors' elaboration from EU-SILC.

However, the analysis, so far does not account for the amount of expenditure on social protection in different EU countries. It could be that countries exhibiting the greatest poverty alleviation also have the highest expenditure on social protection. In order to determine the countries which are the most effective in alleviating poverty, it is appropriate to measure public policy effectiveness on poverty decrease across Member States. Indeed, we expect not only the targeting efficiency but also the budget size is important for reducing income inequality (Caminada et al., 2017).

When we rank countries according to their effectiveness in combating child poverty, each percentage point of social expenditure alleviates poverty in Ireland by two percentage points on average demonstrating that this country, appears to stand out in its effectiveness. Although its spending on social protection as a percentage of GDP is one of the lowest in the EU, Ireland's absolute antipoverty effect of social transfers is the highest among the EU-27 countries, meaning that social transfers in this country reach the most vulnerable children. Other countries demonstrating sufficiently high effectiveness in alleviating child poverty include Lithuania (1.1), Estonia (0.86), Hungary (0.76), Poland (0.76), Latvia (0.74) and Norway (0.74). Relative to their level of social expenditure, Netherlands (27.9%), Greece (26.9%) and Italy (29.6%) was

expected to have a better performance in alleviating child poverty. In contrast, France and Austria realize moderate reduction in poverty rates, but on a markedly higher level of social expenditure (respectively 32.2 and 29.7 percent of GDP) effectiveness (Figure 15).

FIGURE 15: TARGETING EFFECT OF SOCIAL EXPENDITURES (% of GDP) ON CHILD POVERTY REDUCTION, 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

The research confirmed findings similar to other studies that in most generous and efficient systems (e.g., Finland) or in countries where targeting is well organizing and monitoring (e.g., Ireland, Lithuania, Estonia or Hungary), social transfers reduce child poverty rate by 40% or 50% or more. In contrary, at the least efficient countries (e.g. Greece, Spain, Italy, Portugal) the rate is reduced by 20-30% (Social protection Committee, 2014). It seems that countries with the lowest child poverty rates are those in which families with children benefit a good deal from overall social transfers. Also,

countries with higher social expenditure exhibit higher antipoverty effects (both absolute and relative).

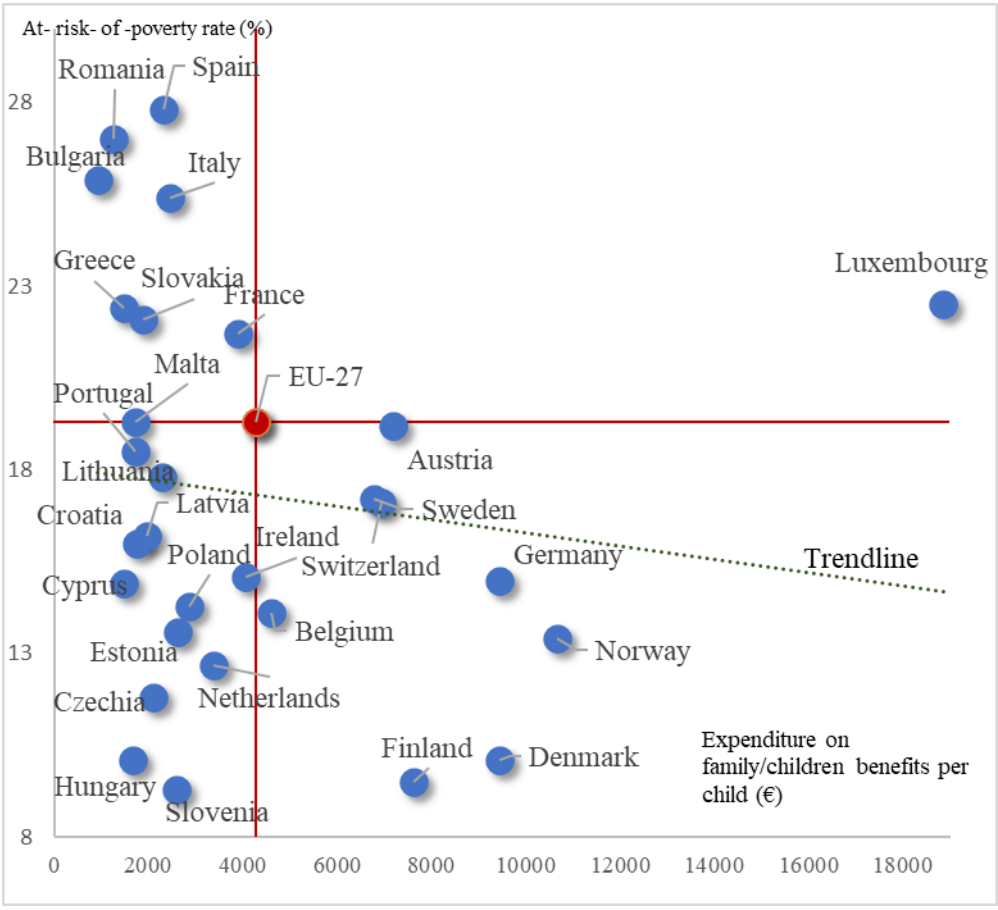
The proportion of expenditure on social benefits allocated to family/children, does not necessarily provide an ideal basis for comparison between countries. The reason is that it is impacted by the amounts spent on all other functions, which are in turn affected by a vast array of socioeconomic factors[23]. For that reason, a more purposeful comparison of expenditure levels for family/children benefits might be to consider expenditure per child, in other words, the level of expenditure for each resident aged less than 18 years (Eurostat, 2023b)[24].

EU expenditure on family/children benefits in 2022 amounted to an average of 4292.8 euros per child but varied considerably across the EU Member States. The level was exceptionally high in Luxembourg (18847.1 euros per child) where relatively high levels of spending are directed to non-means-tested family-related benefits[25]. Elsewhere in the EU, the level of expenditure on family/children benefits was almost similar in Germany (9453.3 euros per child) and Denmark (9447.4 euros per child) although their child poverty rates are dissimilar. The same is also observed for Finland Austria and Sweden having a relatively high expenditure level per child but different child poverty rates. Subsequently, in countries with the lowest average level of expenditure on family/children benefits (Bulgaria, Romania, Greece) we find the highest risks of child poverty. Among the non-member countries shown in Figure 19, the highest level of expenditure was in Norway (10669.7 € per child) and relatively lower in Switzerland (6951.1€ per child) while the risks of child poverty are significantly lower in Norway (Figure 16).

The results confirm that there exists a negative relationship between levels of expenditure on family/ children benefits per child and child poverty rates among Europe. Countries with higher social expenditure exhibit lower risk of poverty showing that increasing social protection benefits per child are decreasing the at-risk-of-poverty rates.

World Bank (2015) compiled a typology of Europe's welfare states that takes the size of their social protection systems, defined as countries' overall social protection spending as a share of GDP, and coverage of the poorest 20 percent the population by anti-poverty social assistance programs (by definition, insurance-based programs like pensions or unemployment benefits are not included). The results confirm that social assistance coverage matters: Welfare states can only be effective in tackling poverty if they cover significant shares of the poorest citizens.

FIGURE 16: SHARE OF CHILDREN, BELOW 18 YEARS OLD, AT RISK OF POVERTY (%) BY EXPENDITURE ON FAMILY/CHILDREN BENEFITS PER CHILD (€), 2022



Source: Eurostat. Authors' elaboration from EU-SILC; Note: Red lines denote the EU average.

Based on these criteria four distinct groups of European welfare states emerge, with varying degrees of attention to poverty reduction:

- Large, balanced welfare states (e.g., Scandinavian and countries form Western Europe) with high social protection spending and high social assistance coverage;
- Truncated welfare states of Southern Europe (Greece, Spain, Italy and Portugal), characterized by low coverage of the poorest quintile by social assistance despite high levels of social spending;
- Small balanced welfare states (Latvia, Lithuania, Romania, Slovakia, and Malta) characterized by low social protection spending, but high social assistance coverage of the bottom quintile;
- Limited welfare states (Bulgaria, Croatia, Czech Republic, Poland, and Estonia), characterized by low social protection spending and low coverage of the poorest quintile by social assistance.

6. MAJOR DISPARITIES OF CHILD POVERTY IN THE EU

The main factors affecting child poverty are the composition and size of the household in which the children live and the labor market situation of their parents, linked also to their level of education (Eurostat, 2021 and 2023c). Highlighting the major disparities in terms of children's risk of living in poverty in the EU. UNICEF (2024) refer to children in single-parent families, children with limitations in activities due to health problems, children with a parent who was born outside the country and Roma children[26].

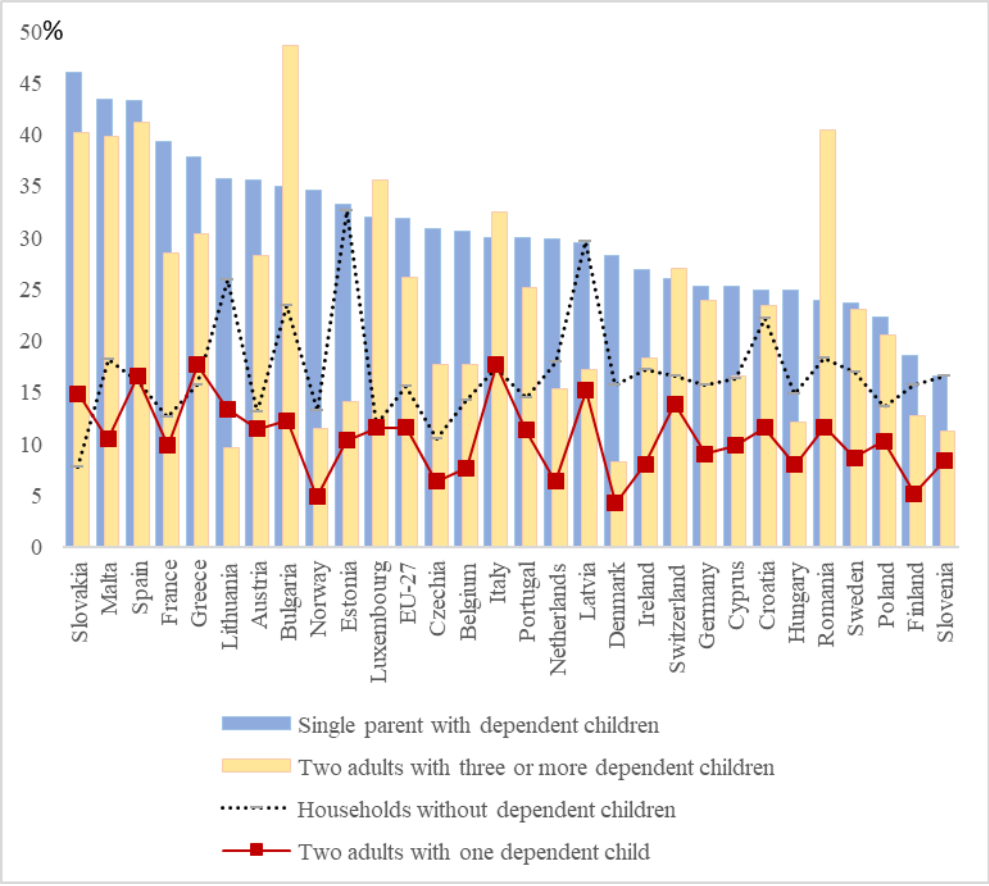
There is a large body of European and international evidence examining the relationship between child poverty and family size and composition in official income statistics and academic research.

This is partly due to the fact that households of different sizes and compositions require a different level of income to achieve the same standard of living. Indeed, empirical evidence confirms that the likelihood of growing up in poverty varies across different types of households. Under certain circumstances, the need for care of young children restricts the options for a second job or even for a full-time job. In addition to the age (child) dimension the risk of poverty affects disproportionately single parent households (mainly female headed) and households with three or more dependent children, something that has been highlighted here and many decades (e.g., Heitzmann and Pennerstorfe, 2024; Balourdos, Demertzis, Pierrakos and Kikilias, 2019).

Figure 17 shows that at-risk-of-poverty rates in 2022 are not uniformly distributed between households with different compositions and dependent children. In the EU-27 the higher risk was recorded for single persons with dependent children, at more than one third (31.8%). Looking at the rates for households with two adults and just

one dependent child (11.5%), had a risk of poverty that was just under half that recorded for households with three or more dependent children (26.1%).

FIGURE 17: AT RISK OF POVERTY RATE FOR HOUSEHOLDS WITH OR WITHOUT DEPENDENT CHILDREN (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

Among the household types shown, there is a great diversity among European countries. Most reported higher at-risk-of-poverty rate for single persons with dependent children. Nevertheless, there were exceptions. In Luxembourg and Italy the rate for households composed of a single person with dependent children was 3.6 and 2.5 pp than that for households with two adults and three or more dependent children, while in Romania and Bulgaria this difference was much larger, 16.6 and 13.6 pp respectively; in Belgium, Denmark, Croatia Latvia, Lithuania, Hungary, Austria,

Slovenia, Slovakia and Finland the rate for households composed of two adults and two dependent children was slightly higher than that for households with two adults and one dependent children. This may be achieved, for example, through the distribution of benefits, presented previously.

Typically, children of educated parents are less deprived in many areas than those of parents with low educational level. The main reason is that parents with a high level of education, are generally employed in a well-paying job mainly in the primary labor market, are able to provide their children with more opportunities and higher wellbeing than parents having a lower level of education. Studies also have also emphasized the importance of parental education in improving the family's capacity to support child development, academic achievement and future employment prospects (Eurostat, 2023c).

As shown in Figure 18, in 2022, children whose parents attained a low education level were more likely to be at risk of poverty[27]. In the EU-27, 48.6 % of children living in the same household as their parents whose highest level of education attained was at lower secondary (ISCED "levels 0-2"), were at risk of poverty. At national level, the rate ranged from 28.3% in Denmark and 33.6% in Hungary to 78% in Slovakia and 73.1% in Bulgaria. In 15 out of the 27 Member States the rate was above 47.0%.

Moreover, immigrant background matters. In fact, children with immigrant background tend to be more exposed to poverty than the total child population. For 2022, in the EU-27 children with at least one parent with a migrant background were at a greater risk of poverty than children whose parent/s were with the citizenship of the country of residence (37.2% compared with 15.6%).

As shown in more detail the risk of poverty for children with immigrant background is extremely high in Spain, France, Sweden, and Netherlands (above 40%). That is one reason that these countries have the greatest differences between children with and without immigrant background- parents (Spain (+36.3pp, Sweden (+32.2 pp), France (+32.1pp) and Netherlands (+30.5pp). For ten other Member States for which data is available, the difference was more than 15.0 pp. It seems that i*mmigrant backgrounds* in some countries display a significant disadvantage for children. Regardless of their general economic level, it seems that other reasons are more important accentuating child poverty in high levels (Figure 18).

Concerning children with disabilities the analysis in based on the EU-SILC survey and the concept of activity limitations operationalized by the Global Activity Limitation Indicator (GALI). In this framework, the data on disability refer to self-evaluation by the respondents of the extent of which they are limited in activities people usually do, because of health problems. The answer distinguishes: strongly limited, limited and not limited. In the following, we use the general term disability in order to cover both "strongly limited" and "limited" (Eurostat, 2023d).

According to Eurostat data for year 2021, in the EU 94.8 % of children who lived in households where the income was below 60 % of the median equalized income had no disability (i.e., no activity limitation due to health problem). This percentage was slightly higher (95.7 %) when considering children who lived in households where the income was above 60 % of the median equalized income.

Consequently, in the EU-27, 5,2% of children having both levels of disability (moderate and severe) were poor. As shown in the Figure 18, in more than half of the EU Member States, a higher share of children with disability was found in households whose income falls below 60 % of the median equalized income. The highest was found in Belgium (9.9%), Denmark (8.6%) and Fin-land (8.6%). In contrary very low level of poor children having activity limitations (severe or moderate) was found in Lithuania (0.2%), Bulgaria (0.5%) and Greece (1.3%).

In the EU, the provision of quality and affordable housing is an important mechanism for tackling child poverty, promoting the social inclusion of children and minimizing the risk of homelessness among children. It stated that there is a high relationship between housing quality and the physical, mental and emotional well-being of children and their overall development (Culora and Janta, 2020; Frazer and Marlier, 2014; Brozaitis and Makareviciene, 2018).

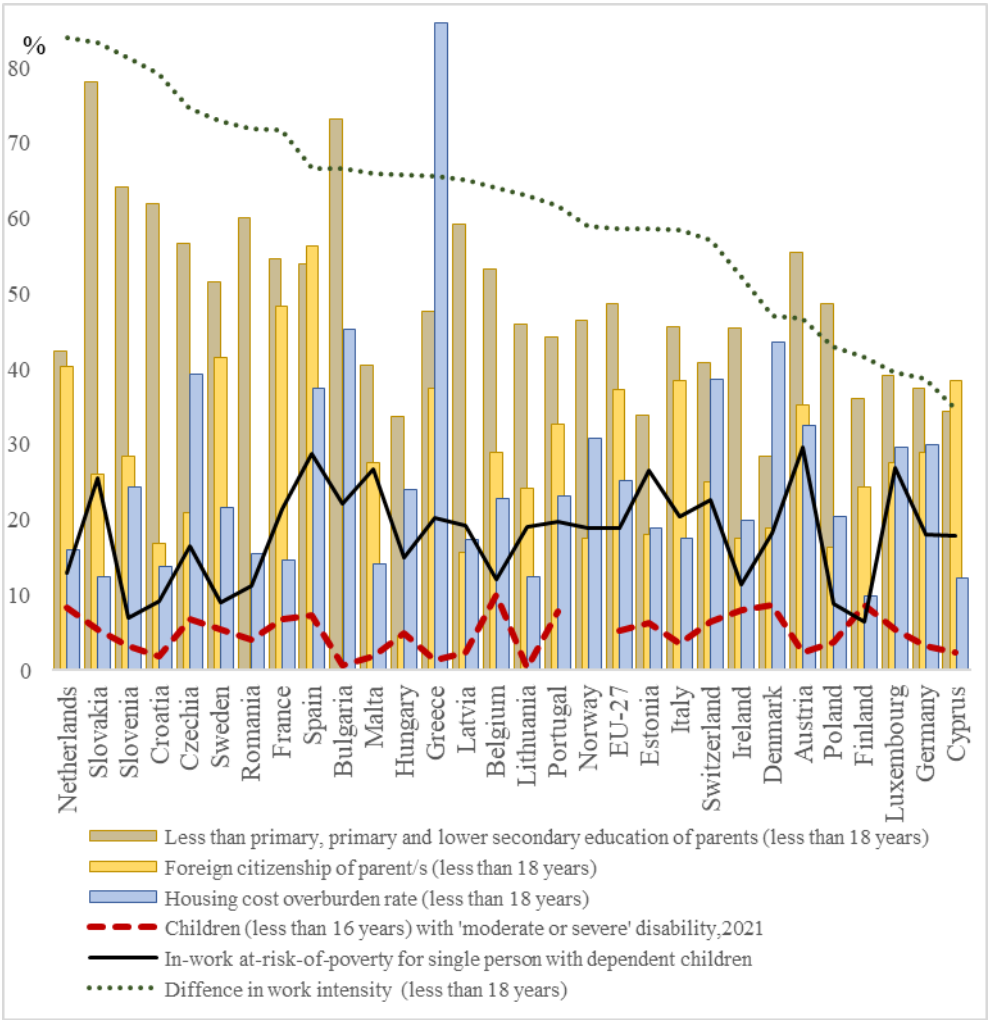
Unaffordable housing has clear implications for all families living below, or around, the poverty line. It is frequently recognized that housing costs often represent the basic and largest part of a household's budget (Stone, 2006), and that poor households spend a particularly high proportion of their income on housing, while the situation is worst for single parent and large families with children. There is thus a concern that deteriorating housing affordability might lead to an intensification of poverty (Eurofound, 2023; Lozano Alcántara and Vogel, 2023; Saunders et al., 2022; Saunders, 2017). At the same time, it cannot straight-forwardly be assumed that concerns about deteriorating housing affordability relate to the poor – Madden and Marcuse (2016) claim that the housing crisis portrayed in the media is more concerned with middle-class would-be homeowners than with the struggle of low-income households to afford their housing costs.

Children are also a high-risk group for overcrowding and homelessness in many MS, both of which have markedly damaging impacts on their well-being and development. Namely, housing difficulties tend to be more severe for families with children and more specifically single parent households. For people at risk of poverty, the share was more than three times higher than for the total population[28].

Housing affordability is an increasing challenge in the European Union. In 2022, almost one in four of those children at risk of poverty lived in a household where total housing costs represented more than 40% of household's total disposable income i.e., it should be spent for housing more than that they can afford[29].

There are major differences in terms of housing costs in relation to income among Member States. Greece is an outlier (Figure 18) as the housing cost overburden rate for children below the poverty threshold is extremely high (85.8%).

FIGURE 18: SHARE OF CHILDREN AT RISK OF POVERTY, BELOW 18 YEARS OLD, ANALYSED BY SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTICS AND SEVERE OR MODERATE DISABILITY (%), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

Closer to Greece is found Bulgaria (45.1%) followed by Denmark (43.4%). At the other side Finland present the lowest rate (9.7%) while Cyprus shows the second lowest rate (12.2%) having Slovakia (12.3%) and Lithuania (12.4%) on a close level. Interestingly, differences are significant between Member States, roughly reflecting the worst situation for those counties showing rates above the EU average. In total, 19 Member States have rates lower than the EU average although six have rates ranging between 20% and 25.1% (EU-average).

6.1. Relation of parents/adults in households with dependent children with the labor market

According to relevant data, in Europe, in 2022 higher risks of poverty are observed among children living in households with very low work intensity (below 20% of parents' potential), compared to those with high work intensity (55–85%)[30]. The aggregate difference in the share of children at risk of poverty between households with high and low work intensity for the 27 EU members (not including Norway and Switzerland) is 58.5 pp (Figure 18)[31].

Some countries (such as Cyprus, Germany, Luxembourg and Finland) have smaller differences for children at risk of poverty between the lowest and high work intensity households (between 35 and 43 pp). In contrast, 22 countries (including Norway and Switzerland) have differences of more than 50 percentage points, approaching a high of 83.2 pp in the case of Slovenia.

However, even for the remaining seven countries the difference is ranging between 35 and 47 pp including countries traditionally considered egalitarian (Denmark and Finland), or middle (Poland or Cyprus), to high income (Luxembourg, Germany). These figures, highlights the fact that access to the labor market does not guarantee a basic standard of living for families, and therefore for children (Figure 18).

Nevertheless, the persistence of the risk of child poverty among high work-intensity households – such as in Romania, Spain, Greece and Luxembourg – highlights the fact that access to the labor market does not guarantee a basic standard of living for families, and therefore for children. More participation in the workforce is not necessarily enough to escape poverty. Other factors, including the quality of employment is also crucial, both in terms of income and the time available for supporting children (Save the children, 2014).

It is claimed that (Andor and Huguenot-Noël, 2021): *the poverty target is the least ambitious of the three targets proposed by the Commission. This is not only puzzling with regards to the Europe 2020 Strategy, where the EU strove towards a reduction by 20 million, against 15 million of today. More concerning is the contrast between the levels of ambition in the employment and the poverty targets. In 2018, one in ten employed people aged above 18 years in the EU were found to be at risk of poverty, bringing the number of 'working poor' to 20 million. While this issue has clearly*

gained in salience in EU policymaking, there are risks that high employment targets unmatched by sufficiently high poverty reduction targets put insufficient pressure on governments to effectively address this issue.

The Nordic countries have historically a lower share of children at risk of poverty as a result of policies favoring, on gender equality in employment, particularly along with generous, and very effective – because they are child centred – social transfers. However lately, these policies have been challenged, resulting in increased child poverty rates. For example, the at risk of poverty rate for children in Sweden was (17.2%) while that of Finland 9.5%. Even if both rates are below the EU average (19.3%), the situation for example for children with immigrant background is totally different. Although, further analysis is required, this rate in Sweden is the third highest (41.5%), while in the same country similarly high rates are found e.g., for the difference between the children living in household with very high and very low work intensity (77.6 pp).

Quality of parental employment is the main precaution against child poverty. Household composition and the combined employment participation of all adults in the household contribute to the income situation and living standards. However, this is not the case for single person households. Studies have reported consisting results on living alone with children as a risk of high poverty. The *situation* is *even* more challenging for those seeking part-time work, which is the case for a large proportion of *single parents.*

Lone parents are usually at the centre of social policy, due to both their higher risk of poverty and the rise in their number parallel with the increase in divorce in European countries in the past decades and the passage of almost all countries to the Second Demographic Transition SDT[32]. In addition, they can be seen as a form of family that is an alternative to the traditional nuclear family, contributing to the diversity that increasingly defines contemporary families in Europe (Balourdos, Demertzis, Pierrakos and Kikilias, 2019).

Single parents accounted for 12.8 % of households with children in the EU as a whole where in some countries it exceeded 25% while households with dependent children are much more likely to be working poor than households without. Earlier studies have found that, low educated workers, those with a temporary contract, working part-time, born in a non-EU country and single parents experienced proportionately greater increases in IWP rates over the period 2012-2017. With regard to household work intensity, there has been a proportionately large increase since 2012 in IWP among medium and also high work intensity poor households (European Commission, Directorate-General for Employment, Social Affairs and Inclusion, Spasova et al., 2019; Eurostat, 2023e).

Latest data, show that overall, in most Member States people in households with dependent children are much more likely to be working poor. The highest rate is found in Austria (29.5%) and Spain (28.7%) while Sweden, Poland, Slovenia and Finland

have rates ranging between 9% to 6.3%. highlighting a social protection system which is especially tailored to protect this type of households with children.

Lone parents and their children are particularly exposed to higher risk of (in-work) poverty and need targeted support, which appear as a particular challenge also for Luxemburg, Malta, Estonia and Slovakia (over 25%).

6.2. Child-specific material deprivation rate[33]

UNICEF's (2012) Report Card 10 published by under the title Measuring child poverty, has had a major impact on research (see, Andresen, et al., 2015). It assesses child poverty with a deprivation index and contrasts this index with findings based on the relative monetary poverty concept. On the one hand, this means that it assumes child poverty can be assessed in relation to child development and needs independently from the comparative wealth of a society, but, on the other hand, that it still has to be related to relative income.

The deprivation index, assesses whether a child has appropriate and at least partially new clothing; all-weather shoes; regular daily meals including fresh fruit, fresh vegetables, and meat (or a vegetarian equivalent); access to books; regular leisure activities in the sense of non-formal education; outdoor leisure equipment such as a bicycle or roller skates. However, the index also includes the opportunity to celebrate special occasions such as birthdays and the opportunity to sometimes invite friends at home. These are actually key aspects that also characterize children's lives in the EU and included at the new child specific material deprivation indicator.

Although poverty and deprivation are highly interrelated, studies on deprivation and poverty are in agreement that there are differences in meanings between these two concepts. For instance, Gordon et al. (2003) depict that the concept of deprivation covers a wide range of circumstances, irrespective of income, which are experienced by the poor people. Accordingly, the concept of poverty indicates the scarcity of income or other resources which make these circumstances highly likely or bound to occur. The two measures are profoundly different in concept. Both have strengths and weaknesses. Taken together, they offer two different but complementary measures and offer the best currently available comparative picture of child poverty in the world's wealthiest nations.

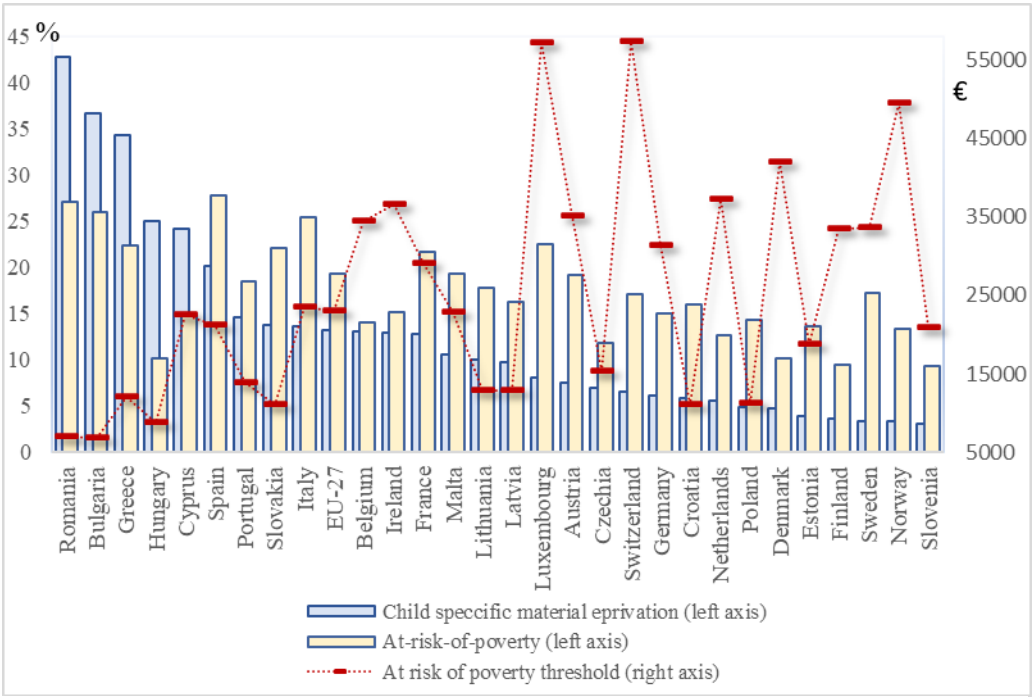
Using a list of child- and household-level deprivation questions available in the EU-SILC 2009, Guio et al. (2012, 2016) assessed their suitability and validity for inclusion into a deprivation scale. They produced an 18-item child deprivation index, drawing the deprivation cut-off at three or more items. Using data from the EU-SILC 2014, they have re-evaluated the index and produced a 17-item version (Guio et al., 2016). Material deprivation is defined as an enforced lack of at least three items from a set of 17 items (12 child-specific and 5 household-specific).

Their composite index is developed with the view to children's rather than adults' or households' needs. In 2021, Eurostat published the result for children aged less than 16 years. Figure 19 show that there is wide cross-national variation in the prevalence of child poverty/deprivation.

Taking child-specific indicators of deprivation as the focus, the figure shows that children in Romania, Bulgaria and Greece are at greatest risk, with child deprivation rates around 40%. Other countries with elevated levels of risk are Cyprus, Spain, Portugal, Italy and (all above the EU average). Children in the three Nordic countries as well as Slovenia, Estonia, Poland, and Netherlands, Croatia, Germany, Switzerland, Czechia, Austria and Luxemburg have the lowest risk of child deprivation.

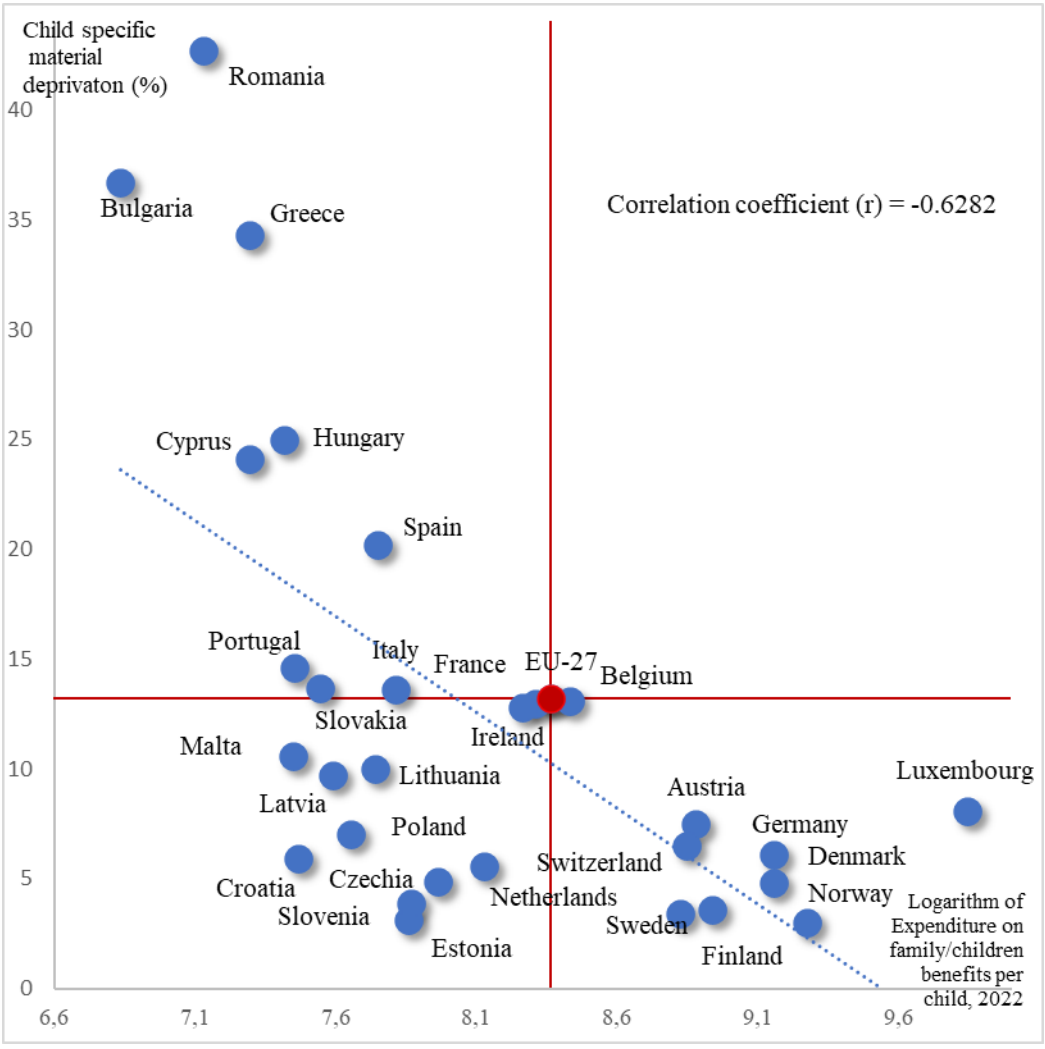
It seems that child poverty and material deprivation is a problem for all Member States but it is higher in some of the least well-off and newer Member States. More than this, a negative correlation between the child specific material deprivation rate and the logarithm of expenditure on family children benefits per child (€) is found for year 2022 (Figure 20).

FIGURE 19: CHILD SPECIFIC MATERIAL DEPRIVATION RATE, FOR CHILDREN BELOW 16 YEARS OLD (%) 2021, SHARE OF CHILDREN BELOW 18 YEARS AT RISK OF POVERTY (%), 2022 AND AT RISK OF POVERTY THRESHOLD, FOR A TWO PARENTS/ADULTS AND TWO DEPENDENT CHILDREN FAMILY/HOUSEHOLD (€), 2022



Source: Eurostat. Authors' elaboration from EU-SILC.

FIGURE 20: CHILD SPECIFIC MATERIAL DEPRIVATION RATE FOR CHILDREN BELOW 16 YEARS OLD (%) 2021, BY LOGARITHM OF EXPENDITURE ON, FAMILY/CHILDREN BENEFITS PER CHILD (€), 2022



Source: Eurostat. Authors' elaboration from EU-SILC; Note: Red lines denote the EU average.

Based on these findings, we roughly may classify the examined European countries into four groups:

- The most northern nations in Europe (Denmark, Finland, Sweden, Norway) along with the Netherlands with the low child deprivation rate, low to medium

at risk of poverty rate for children and high to medium family/children expenditures per child.

- Germany, Switzerland, Czechia, Austria, Luxembourg Latvia and Lithuania together with eight smaller nations that form a group with a deprivation rate between 5.9 and 10 %. The same countries have child poverty rates below the EU-27 average, including also those with the highest family/children expenditures per child (Luxemburg, Switzerland, Austria, Germany).
- A group of a mix member states including Malta, France, Ireland and Belgium with rates of child deprivation below the EU-average together with Italy, Slovakia and Portugal with a deprivation rate ranging between 13.2% (EU average) and below 15%. With the exception of Ireland and Belgium these group has relatively high child poverty rates and medium (the four countries referred previously) to low (the three next referred counties) family/children expenditures per child.
- A series of counties with the highest child deprivation and at risk of poverty rates[34] (Romania, Bulgaria, Greece, Cyprus, Spain), some having the lowest family/children expenditures per child (Romania, Bulgaria, Hungary).

K-means clustering (4 clusters) using child material deprivation rate (children aged less than 16 years), the difference between children (aged less than 18 years) living in households with very low and very high work intensity (less than 18 years) and child targeting effect- public policy effectiveness on poverty alleviation classify Bulgaria, Greece, Spain and Hungary in the cluster with lower-than-average performance in all dimensions ('worst performance cluster'). Besides in the cluster with the northern countries in Europe ('best performance cluster') Norway and Sweden are not included. Norway joins the cluster which includes other "rich countries' (e.g., Switzerland) or Ireland with the highest targeting (Ireland, Lithuania). Sweden is included in a separate cluster with Netherlands, France, Slovenia, Slovakia, Czechia and Croatia. The joblessness of the household is the main concern of this cluster.

7. MAIN CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The percentage of children living in poverty as identified through the child poverty rate for 2022 varies from 9.3% (Slovenia) and 9.5% (Finland) to 27% (Romania) and 27.8% (Spain). The greatest improvements (2018 - 2022), were seen in Lithuania (- 6.1%), Belgium (- 6%), Romania (- 5%), Hungary and Croatia (- 3.7% each).

Material deprivation (child specific for children) among children (1-15 years) varies across countries from as little as 3.1 % (Slovenia) and 3.4% (Sweden) to 36.7% (Bulgaria) and 42.7% (Romania). It was found that both the severity-gap and the persistence of poverty among children tend to be high where the incidence of poverty (AROP) is also high (Bulgaria, Romania, Italy, Spain).

The country where social transfers had the strongest impact on reducing poverty among children was Ireland: for each percentage point of social expenditure child poverty is reduced by 2 percentage points. The lowest effectiveness was observed in Netherlands. Greece, Portugal and Spain (all below 3 percentage points).

Between Sweden, Denmark, Finland and Norway the risk of poverty rate for children is higher in Sweden (17.2% in 2022) and lower in Finland (9.5% in 2022).

Cluster analysis showed a persistent and dynamic European divide. Countries are differentiated clearly into four clusters having at the one pole Greece, Romania, Bulgaria and Hungary (worst performers). The other pole having the best performers either with the lower risk of poverty or child deprivation rates or are efficient in targeting policies to effectively alleviate child poverty, show that policies do not need to be absolutely "expensive'.

Not only targeting effect – public policy effectiveness on child poverty alleviation, but also the adequacy of transfers is important; yet not every country can afford high coverage and reasonable adequacy. Excessive focus on relative measures of poverty treats the symptoms of poverty rather than its causes. Poverty is about more than income and thus policies should take into account its multidimensional aspects and listen to the voices of children.

NOTES

1. The first goal in the Target 1.2 of SDGs focuses on reducing "at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions (United Nations, 2015, p. 19).
2. A reduction in poverty disparities (in absolute and relative terms) is evidence that we are moving toward greater equity by selectively improving the deprivation status of those children who are economically/socially disadvantaged, not by a worsening of the situation of those in advantaged -non-deprived groups.
3. The U.K or Iceland are not included due to data limitations.
4. Discussed more in the section with the empirical findings.
5. In 2021, the AROPE indicator has been modified according to the new EU 2030 target (Eurostat Glossary: At risk of poverty or social exclusion-AROPE):
    - Adjusting the severe material deprivation component, defining a new severe material and social deprivation rate as a percentage of the total population lacking at least seven items out of the thirteen material and social deprivation items;
    - Defining the (quasi)-jobless household indicator as "people from 0-64 years living in households where the adults (those aged 18-64, but excluding students aged 18-24 and people who are retired according to their self-defined current economic status or who receive any pension (except survivors pension), as well as people in the age bracket 60-64 who are inactive and living in a household where the main income is pensions) worked a working time equal or less than 20% of their total combined work-time potential during the previous year".

The revision allows to better measure deprivation, based on a revised list of items, as well as to better account for the social exclusion situation of those in the working age (aged 18 to 64 instead of 18 to 59).

This monetary measure of relative poverty identifies a certain threshold of income to determine relative poverty lines. In the EU, this relative income poverty (called 'at-risk-of-poverty' or AROP) threshold is set at 60% of the national median equivalised disposable income after social transfers.

6. Those who cannot afford at least seven out of thirteen deprivation items (six related to the individual and seven related to the household) that are considered by most people to be desirable or even necessary to lead an adequate quality of life.
7. Those living in households where adults worked equal to or less than 20% of their total combined work-time potential during the previous twelve months.
8. The percentages observed for the total population seems to be more or less equal or close to those for the population aged 18-64 years.
9. All below 3% with Finland having the minimum rate 1.7%, followed by Slovenia 1.8% and Norway 2.2%.
10. This is one of the main reasons why, in this paper, we give emphasis both on monetary child poverty and child specific material deprivation rate, additionally with methodological hints, discussed in the next section.
11. Percentage points (pp).
12. Slovakia Luxembourg France Spain Italy Romania Greece Austria Portugal and Sweden.
13. I.e., showing higher rates than children or the adults. Percentages (in brackets), refer to the rate of the elderly vs the rate for children, given that it (the rate of the elderly) is also higher than the rate for the adult population.
14. While this kind of data is the most suitable for analysing any dynamic phenomenon, the downside is that the data collection is expensive and laborious. Consequently, the coverage of topics must be limited. In addition, there is the problem of attrition, which refers to the depletion of sample size as some individuals disappear from the data for one reason or another. However, the bias caused by attrition is rarely fatal and weighting improves the reliability of the analyses. In EU-SILC, sampling weights are calculated by Eurostat and they are included in the data. The weights adjust both for bias due to cross-sectional non-response and attrition from one wave to the next.
15. A similar comparison could be between Austria and Malta (Figure 12).
16. Commonly, the risk of poverty among children is highest in low-income countries (with the exception of Luxembourg)
17. This remark is also referred by Frazer and Marlier (2012, p. 11).
18. We expect social expenditure types that are best targeted at the poor children to have the largest negative effects on poverty.
19. Social transfers include all welfare payments, including child benefits, but excluding old age pensions. In the EU-SILC they are generally categorised as unemployment benefits, old-age benefits, occupational pensions, children/family related allowances, housing allowances and other social transfers such as survivors, sickness, or disability benefits.
20. A comparison of the number of children on low incomes before social benefits other than pensions and those on low incomes after social benefits illustrates one of the main purposes of such benefits: their redistributive effect and, in particular, their ability to

alleviate the risk of poverty and reduce the percentage of children living in a household with a low income.

21. Here we refer mainly to the risk-of-poverty rate before social benefits. Pensions are excluded from measuring antipoverty effects (Miežienė and Krutulienė, 2019, p.164; European Commission, 2007).
22. For example, expenditure on old-age pensions is linked (among other factors) to the demographic structure of the population. In the case of expenditure on family/children benefits, there is likely to be some link with the low fertility rates and the share of children within the total population.
23. In our case this comparison is made in euros (€).
24. It should be noted that this figure is likely to overestimate substantially the true level of expenditure per child, as a large proportion – over a quarter – of these benefits are provided to non-residents (Eurostat, 2023b).
25. Alongside these factors, other drivers (not examined in this paper), such as cyclical or structural may also affect significantly child poverty in the EU since the onset of the 'Great Recession': a cyclical one – the economic crisis – and a structural one – the phenomenon of inherited poverty.
26. Educational attainment levels are classified according to the International Standard Classification of Education (ISCED): low level of education refers to ISCED levels 0-2 (less than primary, primary and lower secondary education), medium to ISCD levels 3 and 4 (upper secondary and post-secondary non-tertiary education) and high to ISCED levels 5-8 (tertiary education. The level of educational attainment means the highest level of education successfully completed.
27. Also, over the past decade, little progress has been made in reducing the number of homeless people across the Member States.
28. In the calculation of the housing cost burden all annual costs connected with the household's right to live in the accommodation are included (housing and mortgage interest payment, rental payments, structural insurance, regular maintenance and repairs, services and charges - sewage removal, refuse removal and the costs of utilities - water, electricity, gas, heating, etc.), net of housing allowances. Housing cost burden (the share of housing costs in the total disposable household income) is the same for all of the persons in the same household.
29. Low work intensity refers to the ratio between the number of months that household members of working age (18–65 years) who are not a student (aged 18–24) worked during the income reference year. Low work intensity is below 20% of the potential, high intensity between 55% and 85%. Child poverty in this case refers only to the share of children in households with disposable income below the threshold of 60% national median.
30. This means that children of parents with very low work intensity are 58.7% more likely to be at risk of poverty or social exclusion than those whose parents work intensely.
31. Characterized by interrelated changes in fertility (sustained sub-replacement fertility), living arrangements (e.ge increase of single parents), and marital patterns, in many countries of Europe.
32. The child-specific material deprivation rate is the percentage of children below 16 who suffer from the enforced lack of at least three items out of the following 17 items:

1) Twelve child specific material deprivation items collected in the three yearly set of variables:
Some new (not second-hand) clothes; Two pairs of properly fitting shoes (including a pair of all-weather shoes); Fruits and vegetables once a day; One meal with meat, chicken or fish (or vegetarian equivalent) at least once a day; Books at home suitable for their age; Outdoor leisure equipment; Indoor games; Regular leisure activities; Celebrations on special occasions; Invite friends' round to play or eat from time to time; Participate in school trips and school events that cost money; Go on holiday away from home at least one week per year.
2) Four household variables collected annually: Replacing worn-out furniture; Capacity to being confronted with payment arrears (on mortgage or rental payments, utility bills, hire purchase instalments or other loan payments); Ability to keep home adequately warm; Have access to a car/van for personal use.
3). One material deprivation variable collected annually at individual level for adults in the household: Having internet connection.
Note that lack of lack of these (4+1) last items characterize the household and all its members. Child specific material deprivation is defined as an enforced lack of at least three items from a set of 17 items (12 child-specific and 5 household-specific).

33. Except Hungary.

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EFFECT OF INDIVIDUALIZED LEARNING ACTIVITY ON SECONDARY SCHOOL STUDENTS' ACHIEVEMENT IN COMPUTER STUDIES IN AWKA EDUCATION ZONE OF ANAMBRA STATE, NIGERIA

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ABSTRACT

This study investigated the effect of individualized learning activities (ILA) on secondary school students' computer study achievements in the Awka Education Zone of Anambra State, Nigeria. This study was guided by two research questions and three null hypotheses and adopted a quasi-experimental research design, specifically the pretest post-test non-randomized control group design. Nine hundred and five (905), SS2 students for 2022 / 2023 academic session constituted the population. A sample size of 181, SS2 students was drawn from the population. The sample was drawn using a multistage sampling technique. Intact classes of computer study students were used because complete randomization of participants into groups was not possible. A Computer Studies Achievement Test (CSAT) extracted from the West African Senior School Certificate Examination (WASSCE) computer, which was compiled and adopted by the researchers, was used for data collection. Five experts validated the CSAT and lesson plans. The reliability index of the CSAT established using the Kuder-Richardson Formula 20 yielded a reliability coefficient of 0.79. The mean and standard deviation were used to answer the research questions, while the Analysis of Covariance (ANCOVA) was used to test the null hypotheses. The findings of the study revealed that the use of ILA is more effective in enhancing students' academic achievement in computer studies than the Lecture Method (LM). Gender had no significant influence on students' academic achievement in computer studies.

Keywords: *Individualized Learning Activities (ILA), Achievement, Computer Studies.*

1. INTRODUCTION

Individualized learning activities (ILA) can also be called self-regulated learning (SRL), self-directed learning, and self-paced learning. This can be termed the personalized learning strategy style. It is one of the reinforcement theories of learning

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in which learners are expected to receive material in small units. When ready, they take a test on the unit they have just completed. If they passed, they moved to the next unit. Learners progress at a comfortable pace. This theory is related to the constructivist approach of learning, in which learners build themselves with regard to knowledge acquisition (information gathering) and its application in their daily activities. Olatoye, Aderogba, and Aanu (2017) defined ILA as instructional activities in which the content, instructional materials, instructional media, and pace of learning are based on the abilities and interests of each individual learner. It is a complex activity-oriented approach or learning style in which its product lays on self-organization, self-motivation, self-directed, and self-customized strategy instruction that considers individual needs and goals (Chatti, 2010; Miliband in Shemshack & Spector, 2020). This type of learning style does not require a coach, facilitator, or teacher; rather, it frees teachers from focusing on the needs and problems of individual students. However, Gibney (2000) emphasized that ILA could be approached in several ways to improve learning and bring about guided and directed instructional learning. Such approaches, as listed by Gibney (2000), are as follows: learning activity packages (LAP), computer-assisted instruction (CAI), and many others. On the other hand, ILA support hands-on-activities, creativity of individual learners, skill development of individual learners, intellectual curiosity, and help learners gain self-confidence. Udu (2017) stressed that ILA could provide learners with the opportunity to grow in self-discipline, self-motivation, self-creativity, and also present occasions for genuine interaction between the teacher and students, which are the future of constructivist-based activities.

Studies conducted by Udu (2017) and Loeng (2020) point out that individual learners take decisions, initiative, and responsibility for their own learning. These researchers have employed instructional techniques such as adaptation, simulation, problem solving, and self-assessment/evaluation. The present study will adopt the aforementioned instructional techniques because there is a need to introduce, adopt, and adapt an instructional activity-oriented teaching-learning style that is individualistic in nature and takes cognizance of various learners' levels of intelligence, which seems capable of improving learners' creative ability and academic achievement.

Computer studies are the study of methods to represent objects and processes. This involves defining problems, analyzing problems, designing solutions, developing, testing, and maintaining programs. It deals with the study of computer systems and applications for solving everyday problems (Anaehobi, Offiah and Okigbo, 2019). Computer studies as vocational, science, and technology-oriented subjects deal with ways of representing objects and processes that include algorithmic processes, their principles, hardware and software designs, applications, and their impact on society (Okekeokosisi, 2021).

As a school subject, it is of great value and an indispensable tool in equipping individuals with the required knowledge and skills for self-reliant, life-long learning activities, and occupations in the field of work. In view of this, FRN (2013) introduced computer studies into its curriculum. Thus, its aim is to prepare and develop citizens through skills and to impact knowledge for life-long learning, human development, and occupation in diverse fields. This subject will equally assist learners in tackling challenges in the near future. These aims are in line with the United Nations Educational Science and Cultural Organization (UNESCO, 2002), which recommends that all vocational and technical subjects in the 21st century should be geared towards life-long learning. In addition, secondary school education prepares students for meaningful living in society and for further education. According to Nwakpa (2017), the secondary school level is the bridge between the primary and tertiary levels. The underlying principle is that secondary schools should be able to provide quality education to all students.

The need to provide quality education made the National Council on Education (NCE, 2005) direct and reform Nigerian education to meet the National Economic and Development Strategies (NEEDS) and the Millennium Development Goals (MDGs). In accordance with this, the Nigerian Educational Research and Development Council (NERDC, 2008) reviewed the curriculum to expose learners towards achieving the MDGs and NEEDS. This action is to update and produce science, technology, and vocational education with relevant knowledge and skills for lifelong learning.

The above-stated objectives notwithstanding, the achievement of secondary school students in computer studies, which is a vocational subject, is very discouraging. The evidence of this perception could be based on the reports of Chief Examiners of the West African Examination Council (WAEC) on computer studies from 2019 to 2022. The reports indicated the candidates' persistent average performance and weaknesses as having little understanding of the content of the subject matter, specifically in acronyms, basic programming, keywords in defining terms, misinterpretation of computer files, inability to differentiate between data and information, and confusion between algorithms and flowcharts. Other weaknesses include logic operation, inability to differentiate between types and examples of computer viruses, answering questions on number bases, poor handwriting, spelling mistakes, and poor knowledge of computer keywords.

From the summary of results, it was shown that a greater percentage of students performed below average in the computer studies examination. Computer studies encompass much more than ways of representing objects and processes, including knowing how to use computers, applications, and analyses that help solve various human problems (O'Neill, Summers and Smith, 2021). This means that computer studies, if effectively taught, have applications in diverse human endeavors. Therefore, learners should be taught by competent teachers using appropriate methods. This study aims to investigate whether an activity-oriented and individualized strategy could

generate students' interest in computer studies, potentially resulting in higher academic achievement in the subject.

Academic achievement is attributed to great effort and hard work to succeed in one's activities. In relation to teaching and learning, it is the extent to which a learner is evaluated by the teacher or institution of learning to attain educational goals. Ogoke, Otumegwu, and Nwaneri (2022) defined achievement as the act of accomplishing something successfully, especially by means of exertion, skill, practice, or perseverance. It is not only about reaching greater heights but also about obtaining something after a bit of struggle. It is equally seen as a test used to assess learners' extent of learning a particular course after receiving instruction on course content. Mbonu and Okoli (2019) defined achievement as the attained ability or degree of competence in school tasks, usually measured by standardized tests expressed in grades, based on norms derived from a wide sampling of learners' academic abilities. It equally connotes the accomplishment of desired learning outcomes. Therefore, achievement in learning rests on varied factors such as instructional method, learning environment, and the learner (Okekeokosisi and Okigbo, 2019). That is to say, achieving learning objectives requires the adoption and adaptation of activity-oriented methods that can address male and female learners' different intellectual abilities and provide individual learners with the opportunity to interact with the learning environment.

Male and female are attributes of gender. Gender has been the focus of educational research in recent years since some courses have been ascribed mainly to male students or female students. Anaekwe, Nnaka, and Anaekwe (2018) described gender as the economic, social, and cultural attributes and opportunities associated with being male or female. It is a psychological term that describes behaviors, attitudes, and personality traits that are designated as either masculine or feminine in a given culture (Brown and Jewell, 2019). These behaviors and attributes can be seen as cultural constructs that distinguish the roles, mental and emotional characteristics, and behaviors of males and females in society. In addition, gender encompasses attributes opposed to sex, which are biological and primarily based on the socio-cultural differences between boys and girls (Akinyemi and Ebimomi, 2020). As a result of gender roles assigned by different cultures, many females have been brought up to believe that vocational, science, and technology-oriented subjects are reserved for males (masculine gender) only. To some, males perform better than females in vocational, science, and technology-oriented subjects, while to others, females perform better in arts-related subjects. Because of these contradictory reports and beliefs on gender, further investigation needs to be carried out, hence the motivation for the present study.

1.1. Statement of the problem

Computer studies, as a vocational subject at the secondary level of education in Nigeria, plays a vital role in learners' skill and entrepreneurship development, lifelong learning, and national development. Therefore, the subject needs to be taught by competent teachers who can use innovative teaching methods and guide students toward achieving the desired educational goals.

The available Chief Examiners' reports on computer studies for WASSCE May/June 2019-2022 reveal an average performance of students in the subject. The reports attribute the cause of students' average achievement to several factors: lack of knowledge of subject matter, poor handwriting, spelling mistakes, lack of interest, non-commitment, and poor methodology on the part of teachers. Poor teaching methods could result from the continuous use of conventional teaching methods in the classroom.

The average achievement of students could be attributed to factors such as lack of interest, lack of commitment, and frustration on the part of students. Given these primarily suspected causes of average academic achievement, there is a need for an innovative and activity-oriented instructional strategy that could potentially enhance better learning outcomes for learners. This study aims to investigate the effect of such a strategy on students' achievement in computer studies. Therefore, the problem addressed by the present study is whether an individualized learning strategy will improve students' achievement in computer studies.

1.2. Purpose of the study

The purpose of this study is to investigate the effect of an individualized learning strategy on students' achievement in computer studies. Specifically, the study aims to determine:

1. The difference in the mean achievement scores of students taught computer studies using individualized learning activities (ILA) compared to those taught using the lecture method.

2. The difference in the mean achievement scores between male and female students taught computer studies using individualized learning activities (ILA).

1.3. Research questions

The following research questions will guide the study:

1. What is the difference in the mean achievement scores between students taught computer studies using individualized learning activities (ILA) and those taught using the lecture method (LM)?

2. What is the difference in the mean achievement scores between male and female students taught computer studies using individualized learning activities (ILA)?

1.4. Hypotheses

The following null hypotheses will be tested at 0.05 level of significance.

1. There will be no significant difference in the mean achievement scores between students taught computer studies using individualized learning activities (ILA) and those taught using the lecture method.

2. There will be no significant difference in the mean achievement scores between male and female students taught computer studies using individualized learning activities (ILA).

2. LITERATURE REVIEW

Individualized instruction theory was developed in the mid-1960s by Fred Keller and Gilmour Sherman. The theory states that learners learn materials in small units. This theory is tailored to fit the educational needs and skills of an individual learner. It involves changing the pace at which information is delivered, the methods through which the content is offered, and the materials distributed.

Thus, Meyer (2017) referred to individualized learning activities (ILA) as putting the learner first through engaging content and technology. The United States Department of Education (USDE, 2019) contends that individualized learning activities involve instruction in which the pace of learning and the instructional approach are optimized for the needs of the individual learner. The USDE (2019) further emphasized that learning objectives, instructional approaches, and instructional content might vary based on learners' needs. The USDE maintained that learning activities become meaningful and relevant to learners when they are driven by their

interests and are often self-initiated. Meyer (2017) and the USDE (2019) ascribed certain characteristics to ILA, respectively.

The characteristics of individualized learning activities, according to Meyer (2017), are elucidated as follows: There are various approaches to individualized learning activities, but most of them share common characteristics, including learners' ownership of the learning process, a focus on the learning process rather than end-of-year tests, and competency. Emphasis is on mastery-based student progression and anytime, anywhere learning. Students have the opportunity to learn in ways that suit their individual needs and interests. Student assessments are still critical, but they serve more as tools to inform the learning process rather than as yardsticks for measuring the results of that process. Learning objectives and goals are clear to students, but the assessments are integrated into the day and serve to determine when students are ready to move on to the next skill or concept.

The characteristics also involve giving students the opportunity to learn outside the classroom or school day through real-world experiences in the community or digital learning opportunities. In stressing the importance of individualized instruction, Meyer (2017) states that the students' input tool helps them reach their goals and improve the way they learn. Accordingly, Izuegbunam and Osuafor (2020) describe the characteristics of individualized instruction as follows: lesson plans, including goals, teaching styles, and content, are geared toward the specific needs of the students. Lessons are developed based on the interests of the students. The pace of teaching is adjusted to suit individual learners, keeping lessons moving at the pace of the student's learning. Learning is democratic; students have a say in what they learn and how they learn it. Technology is often used to achieve the goals of individualized instruction.

Therefore, the application of this theory in the educational environment offers learners of various skill levels the opportunity to acquire knowledge at their own pace through different learning styles and different learning materials.

3. METHODOLOGY

The study adopted a quasi-experimental design, specifically the pretest-posttest non-equivalent control group research design. The population consisted of 905 SS2 students. A multi-stage sampling procedure was employed to select a sample size of 181 senior secondary year-two (SS2) students from two government-owned co-educational schools in Awka Education Zone of Anambra State. The sampled students, from two intact classes, were randomly assigned to experimental and control groups using a coin flip. The instrument used for data collection was a 50-item multiple-choice Computer Studies Achievement Test (CSAT), extracted from past WASSCE computer studies questions. These past questions were compiled and adopted by the researchers for the study. The instrument was validated by five experts.

The reliability of the instrument was established using the Kuder-Richardson Formula 20, with a reliability coefficient (KR-20) for CSAT found to be 0.79.

The experiment was conducted in two phases: Phase One and Phase Two.

In Phase One, the research assistants, who were regular computer studies teachers at the sampled schools, were briefed. For the experimental group, the research assistant was instructed on using ILA with lesson plans developed by the researchers. In contrast, the research assistant in the control group was provided with lesson plans on LM and instructed to teach as usual.

Phase Two began with the administration of a pretest (CSAT) to both the experimental and control groups. The teaching process for both groups spanned four weeks, with a selected concept in computer studies taught each week. In the final week of teaching, a posttest (reshuffled CSAT) was administered to participants in both groups. Both the pretest and posttest were collected, scored, and recorded by the researchers.

Data from the tests were analyzed using mean and standard deviation to address the research questions, and Analysis of Covariance (ANCOVA) was employed to test the null hypotheses at a significance level of 0.05. The null hypothesis was rejected if the probability (p) value was less than or equal to 0.05; otherwise, it was not rejected.

4. FINDINGS

Research Question 1: What is the difference in the mean achievement scores between students taught computer studies using individualized learning activities (ILA) and those taught using the lecture method (LM)?

TABLE 1: PRETEST AND POST-TEST ACHIEVEMENT MEAN SCORES OF SECONDARY SCHOOL STUDENTS TAUGHT COMPUTER STUDIES USING INDIVIDUALIZED LEARNING ACTIVITIES (ILA) AND THOSE TAUGHT USING LECTURE METHOD (NORM = 50)

Source of Variation	N	Pretest Mean	Post-test Mean	Gained Mean	Remark
ILA	60	33.03	56.13	23.1	Effective
LECTURE	51	26.16	32.12	5.96	

Students taught with ILA had pretest mean score of 33.03 and posttest mean score of 56.13 with gained mean 23.1 While students taught with lecture method had mean

of 26.16 and posttest mean score of 32.12. Thus, individualized learning activities are effective in enhancing secondary school students' achievement scores in computer studies.

Research Question 2: What is the difference in the mean achievement scores between male and female students taught computer studies using individualized learning activities (ILA)?

TABLE 2: PRETEST AND POST-TEST ACHIEVEMENT MEAN SCORES OF MALE AND FEMALE SECONDARY SCHOOL STUDENTS TAUGHT COMPUTER STUDIES USING INDIVIDUALIZED LEARNING ACTIVITIES (ILA) (NORM = 50)

Source of Variation	N	Pretest Mean	Post-test Mean	Gained Mean	Remark
Male	31	37.94	61.39	23.45	More Effective
Female	29	27.79	50.51	22.72	

Source: Authors' own calculations.

Table 2 reveals that the male secondary students taught computer studies using individualized learning activities had pretest mean score of 37.94 and posttest mean score of 61.39 with gained mean 23.45 in their achievement while their female counterparts had pretest mean score of 27.79 and posttest mean score of 50.51 with gained mean 22.72. With gained mean scores of 23.45 for the male students and 22.72 for the female students, individualized learning activities is more effective in enhancing male secondary school students' achievement scores in computer studies.

$H0_1$: There will be no significant difference in the mean achievement scores between students taught computer studies using individualized learning activities (ILA) and those taught using the lecture method.

TABLE 3: ANCOVA ON THE MEAN SCORES OF SECONDARY SCHOOL STUDENTS, TAUGHT COMPUTER STUDIES USING INDIVIDUALIZED LEARNING ACTIVITIES (ILA) AND THOSE TAUGHT USING LECTURE METHOD

Source of Variation	SS	df	MS	Cal. F	*P* Value	P ≤ 0.05
Corrected Model	19362.406	2	9681.203	107.707		
Intercept	9499.576	1	9499.576	105.687		
Achievement1	3462.724	1	3462.724	38.524		
Instructional Method	10225.798	1	10225.798	113.766	0.0000	S
Error	9707.504	108	10225.798			
Total	254836.000	111				
Corrected Total	29069.910	110				

Source: Authors' own calculations.

Table 3 indicates that at 0.05 level of significance, 1df numerator and 108df denominator, the calculated F is 113.77 with P-value of 0.000 which is less than 0.05. Therefore, the second null hypothesis is not accepted. So, the difference in the mean achievement scores between students taught individualized learning activities and those taught with lecture method is significant.

$H0_2$: There will be no significant difference in the mean achievement scores between male and female students taught computer studies using individualized learning activities (ILA).

TABLE 4: ANCOVA ON THE ACHIEVEMENT MEAN SCORES OF MALE AND FEMALE SECONDARY SCHOOL STUDENTS, TAUGHT COMPUTER STUDIES USING INDIVIDUALIZED LEARNING ACTIVITIES (ILA)

Source of Variation	SS	df	MS	Cal. F	*P* Value	P ≤ 0.05
Corrected Model	4177.547	2	2088.773			
Intercept	10428.518	1	10428.518			
Achievement1	2407.210	1	2407.210			
Gender	384.129	1	384.129	3.249	0.077	NS
Error	6739.387	57	118.235			
Total	199974.000	60				
Corrected Total	10916.933	59				

Source: Authors' own calculations.

Table 4 shows that at 0.05 level of significance, 1df numerator and 59df denominator, the calculated F is 3.25 with Pvalue of 0.077 which is greater than 0.05. Therefore, the eighth null hypothesis is accepted. So, the difference in the mean achievement scores of male and female students taught individualized learning activities is not significant.

5. CONCLUSIONS

The findings from the study showed that individualized learning activities is effective in enhancing secondary school students' achievement scores in computer studies. This enhanced self-motivation among learners and active engagement during instructional delivery.

5.1. Discussion

The results of data analysis in Table 1 have shown that individualized learning activities are effective in enhancing secondary school students' achievement scores in computer studies. These findings are supported by Dawal (2021), as well as Eziokwu, Asogwa, Ogbuanu, and Chiamogu (2023), who in separate studies found that

individualized instructional activities are superior to the lecture method and facilitate learners' achievement.

Furthermore, data in Table 2 reveals, that the lecture method is more effective in enhancing the achievement scores of male secondary school students in computer studies. This contrasts with Dawal's (2021) findings, which indicate that female students achieve higher scores when taught with individualized learning activities compared to the lecture method.

5.2. Recommendations

Based on the findings of the study, the following recommendations are made:

1. Innovative teaching strategies should be integrated into the Computer Studies curriculum of teacher training tertiary institutions in Nigeria to promote their adoption among teacher trainees.
2. Secondary school computer studies teachers in Nigeria should regularly attend conferences, workshops, and seminars. These events provide opportunities to acquire the necessary skills and knowledge for effectively implementing innovative teaching strategies in their classrooms.

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Dr Charalambos Louca, Editor
The Cyprus Journal of Sciences
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ISSN 2357-1527

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