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Jak SIMONI

# Universal Design: Lithuanian Experience

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## Abstract

Even though strong efforts have been put to remove barriers and become an open and inclusive society, people with disabilities still face daily challenges that result in frustration, low self-esteem and lead to isolation of them. This article discusses the concept of universal or inclusive design that is supposed to overcome difficulties faced by the disabled people and issues related to its implementation in Lithuania. The research presented in this text is informed by a study and discussion of legal documents. The authors aim to highlight the importance of universal design in ensuring the full participation of people with disabilities in society by providing them with access to education, employment and social life. In order to assess the need for universal design for persons with disabilities, the population, its characteristics, and the social issues related to it in Lithuania today are being discussed based on the qualitative study that involved sixteen participants, eight of whom were disabled or had a temporary disability, and the other eight who had no disability but had experience in the work with people with disabilities.

**Keywords:** universal design, disability, individual needs, self-actualization

## 1. INTRODUCTION

Each person has own individual needs, determined by personal nature and socio-cultural environment. Various legal documents of the Republic of Lithuania recognize that a person with disabilities, like all members of the country's society, must be a full-fledged individual who is able to pursue an education, engage in occupational activities and actively participate in social life. This attitude of the state social policy is embodied and reflected in the application of the idea of universal design in the architecture of public life.

The research presented in this article is informed by a discussion of legal documents. The study is based on a discussion of legal documents. These include the United Nations Convention on the Rights of Persons with Disabilities and its Optional Protocol (2006), the Law on Construction of the Republic of Lithuania (2022), and the Law on the Social Integration of Persons with Disabilities of the Republic of Lithuania (2023), which outline the concept of universal design, the principles of its application, and the requirements for adapting the physical environment to persons with various disabilities. The article also draws on the works of Smart (2009), Fatkulina and Staškevičienė (2020), Baužienė (2023), Martínez-Medina et. al., (2022), Jones (2021), Orth and Robins (2022), Tarvainen and Hänninen (2022), Collins et. al. (2021), Badirova (2022) which analyse the individual needs of people with disabilities.

The aim of this article is to highlight the importance of universal design in ensuring the full participation of people with disabilities in society.

The qualitative study, carried out in 2022, involved sixteen participants, eight of whom are disabled or have a temporary disability, and the other eight who have no disability but work with people with disabilities. The questions for respondents were formulated in such a way that, based on authentic experiences and attitudes, the answers would reveal their personal perception of universal design, their attitudes towards the idea, the possibility of

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its implementation in public life, and the necessity of it. The sample size is small, the appropriateness of which is reasoned by the philosophical approach of social constructivism (Silverman, 2010).

The research is conducted in accordance with ethical and moral principles that guarantee personal privacy and anonymity. No personal data that would allow identification of the informants are provided.

## **2. The concept of disability**

As we cross the threshold into the third decade of the 21st century, the problems of people with disabilities of one or another kind continue to be topical, and the search is on for ways and means to ensure their independent and fulfilling lives. There has been a significant evolution of progressive thought: the recognition of the human being as an intrinsic value, raising and reflecting on the question of equality in various ways to ensure the rights and freedoms of different and diverse individuals, is being addressed at the highest political level in both Europe and Lithuania.

Disability can be classified into visible and invisible. Those disabilities that are not clearly visible, easily observable, need to be revealed. Society's encounter with, recognition and acceptance of people with disabilities is therefore directly linked to the personal, often observable, experience of disability. This also determines the different experiences of disabled people in public life: whether they are perceived as disabled through preconceived notions and stereotypes, or whether perceptions are shaped by the unique experience of encounter (Smart, 2009).

It is important to consider the criticism made by Jones (2021) regarding the criteria for determining the level of disability, as objective health parameters do not always reflect a person's true condition, which is influenced by internal physical aspects as well as by the external social and economic environment.

Baužienė (2023) describes disability as a cultural phenomenon, as capability and disability are a matter of mindset and consensus, and therefore depend heavily on the current situation, as well as inherited beliefs and judgements. Perhaps this is why people with disabilities are constantly looking for opportunities to integrate into the social environment and the world of activities, not only to create material wealth, but also to realize themselves as individuals, which is a prerequisite for the quality of life of every individual.

## **3. Self-actualization, Inclusion and Barriers to Overcome**

As it is stated in the Universal Declaration of Human Rights (1948), all of us, human beings, are born free and equal in dignity and rights. Living with dignity contributes to one's self-esteem and confidence in making choices and decisions that are right for you, that help build relationships with others, feel valuable and valued, and, as a result, lead to greater life satisfaction. Throughout our lives and our life experiences, we create our own image that is known as self-esteem. What we know as self-esteem, is nothing more than having a positive or negative attitude about and picture of ourselves. Self-esteem is a subjective acceptable or unacceptable attitude toward oneself that develops over a long time and is influenced by a variety of different socio-economic factors (Jung, Y.H et al., 2022) Depending on our personal situations, it can be positive or negative. High self-esteem contributes to initiating and maintaining social relationships, resulting in a stronger social network and greater availability of emotional, instrumental, and informational support, which may lead to positive outcomes in many life domains beyond relationships (e.g., school, work, mental health, and physical health). High self-esteem also strengthens persistence after rejection and failure, which again may lead to better outcomes in school, work, relationships, and health (Orth and Robins, 2022). Having a positive self-image, we approach our environment as a safe space to interact and be part of it. When we are more sociable, we become more resourceful and more successful in achieving our personal goals which leads to self-actualization and happiness.

The right of everyone, as a member of society, to social security, to work, to free choice of employment, to just and favorable conditions of work and to protection against unemployment, to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay is foreseen by the Universal Declaration of Human Rights (1948). The United Nations Disability Inclusion Strategy, through its policy and accountability framework, is a comprehensive strategy for ensuring that the United Nations system is fit for purpose in relation to disability inclusion. It provides a foundation for sustainable and transformative change towards disability inclusion (2019).

Even though strong efforts have been put to remove barriers and become an open and inclusive society, people with disabilities still face daily challenges that result in frustration, low self-esteem and lead to isolation.

Tarvainen and Hänninen (2022) note that employment is considered a major source of social inclusion, because participation in working life entails social and emotional as well as material and economic equality with non-disabled persons, but people with disabilities worldwide face various structural barriers and discrimination in relation to it. Badirovna (2022) points out that when discussing the problem of personal and social self-realization of this group of the population, it

should be noted that at present only a small part of people with health problems can get a higher education, find a job, start a family and realize themselves as a person because of the variety of difficulties they face. The environmental factors influencing the process of inclusion of disabled people into society, such as the adaptability of the infrastructure, improvements in the accessibility of facilities, the shortage of knowledge and skills in the development of inclusive higher education programs for disabled people, the availability of jobs for this group of citizens still complicate the process of social integration.

Drawing attention to the fact that social inclusion has no single definition and is interpreted in diverse ways, Collins et. al. (2021) define it as a process with four interlocking dimensions in which everyone feels valued and has the opportunity to participate: access, participation, representation and empowerment. Consequently, it is necessary to provide strategies and tools to people with disabilities to improve their empowerment, as well as to act in the social environment to achieve a balance that allows the full and effective participation of them under equal conditions. (Martínez-Medina et. al., 2022).

#### **4. Universal Design**

Convention on the Rights of Persons with Disabilities (2006), states that ‘universal design’ means the design of products, environments, programs and services in such a way that eliminates the need for adaptation or specialized design. According to the UN Disability and Development Report (2018), the population of persons with disabilities is expected to increase in urban areas where persons with disabilities are impeded from fully enjoying their livelihoods when physical and social barriers exist. When striving for cities and communities to become inclusive places for persons with disabilities to live, be active and experience personal fulfillment, these barriers have to be eliminated. To ensure accessibility for all, universal design principles should be incorporated not only into the plans for new built environments but also into the renovations to existing buildings and facilities.

This widely accepted approach is frequently discussed in the scientific publications focusing on the inclusion of people having specific individual needs into active social life. Müller et. al. (2022) pay attention to the fact that when planning urban spaces in order to make them inclusive by supporting or impeding certain people or groups in their use of buildings or public space, it is very important to consider how buildings, walkways and public places are designed, which is directly linked to the choices and strategies, affected by laws and policies as well as by the practitioners’ knowledge and experiences. This emphasizes a need for increased awareness on which resources, choices and factors are contributing to or hindering the implementation of universal design. As approached by the participants of the survey carried out by Erdtman et. al. (2022), universal design is a single perspective that embraces a multitude of complex needs and situations and is a tool to initiate discussions on inclusion, diversity and enabling design which may turn our focus to regarding accessibility as being contextual and regulations as being a framework and incentive for innovative creativity.

### 5. Overview of the Population

In order to assess the need for universal design for persons with disabilities, it is necessary to discuss this population, its characteristics, and the social issues in Lithuania today. According to the data of the Lithuanian Department of Statistics, the number of persons with disabilities had been decreasing between 2016 and 2021, but it can be assumed that this reflects a general decline in Lithuania’s population due to various demographic processes. The mortality factor is also significant in the downward trend, as during the period analysed (see Figure 1), the dynamics of the number of disabled people of retirement age in 2016 - 65,984; in 2017 - 64,375; in 2018 - 5,527; in 2019 - 6,264; in 2020 - 6,068; in 2021 - 5,610.

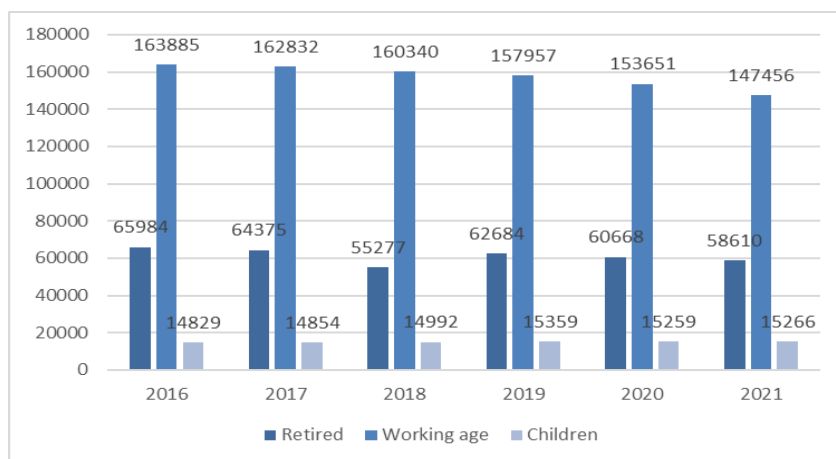


Figure 1. Dynamics of the number of people with disabilities in the period 2016-2021 (according to the Official Statistics Portal, 2023)

When analysing the data (see Figure 2), it can be seen that women with disabilities whose activities have been slightly or severely restricted due to their health impairments have a higher rate of poverty than men, but there is a declining trend in this gap over the period analysed. The highest poverty gap of 13 percentage points was recorded in 2018 and it decreased to 9 percentage points in 2022. When analysing the dynamics of the poverty rate of women with disabilities, it was observed that the highest rate of it expressed by 40.7% was in 2022 and the lowest of 36.1% within the period under observation in 2019. When analysing the poverty rate of disabled men, it should be noted that the highest poverty rate of 31.7% was in 2022 and the lowest 23.8% in 2019.

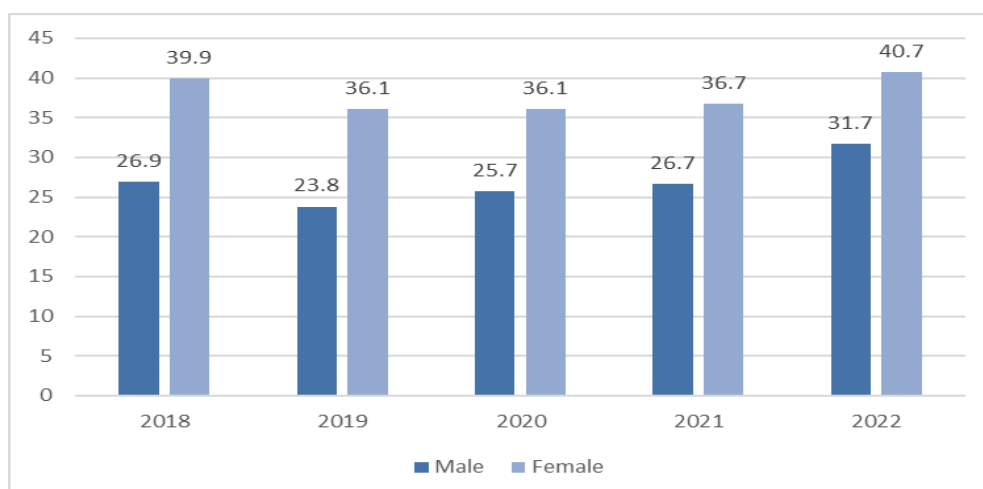


Figure 2. Poverty risk level for people whose activities were slightly or severely limited due to health problems (percentage, according to the Official Statistics Portal, 2023)

Trends in the number of people by age group who due to health impairments resulting in some or very limited activity are living in overcrowded housing (see Table 1) show that the situation is the most difficult in the 35-44 age group. It must be noted that the situation worsened by 11.3 percentage points during the analysis period. During the period under analysis, a negative trend of 5.2 percentage points was also recorded in the 45-54 age group. A stable situation is observed in the 55-64 age group: 10.7% in 2018 and 10.2% in 2022. In the age group over 65, the percentage of people living in overcrowded housing was 8.9% in 2018, and increased to 11.2% in 2022, which represents a negative change of 2.3 percentage points. It is worth noting that in the 16-29 age group, the number of people living in overcrowded households who were mildly or severely limited in their activities due to health problems decreased by 16.8 points.

Table 1. Dynamics of the number of people living in overcrowded accommodation who are slightly or severely limited in their activities due to health problems (% , according to the Official Statistics Portal, 2023)

Age	Year	2018	2019	2020	2021	2022
16-29		44,1	39,7	33	31,7	27,3
25-34		29,1	36,8	25,2	22,6	25,7
35-44		27,6	33,2	28,7	26,9	38,9
45-54		20,1	23,9	24	9,8	25,3
55-64		10,7	12,4	,6	9,8	10,8
65 and older		8,9	8,6	10,8	11,3	11,2

To sum up, the number of persons with disabilities in Lithuania in 2016-2022 has been on a downward trend, which is most evident in the working age group, with a decrease of 16,429 persons, i.e. by about 10%. The number of people with disabilities in the retirement age group decreased by 7,174 people, representing 10.9% of the total. The number of children with disabilities shows a positive trend, increasing by 2.9% to 1,526 persons during the analysis period. Women have a higher risk of poverty than men due to health impairments in the group of people with slightly or very limited activities. The highest number of such persons is recorded in 2022, 40.7% for women and 31.7% for men. People living in overcrowded housing who are mildly or severely limited in their activities due to health problems are mostly in the age groups of 35-44 and 45-54.

It is also important to note the ageing indicators of the Lithuanian population (see Table 2). One of these is the demographic old-age ratio, which measures the number of elderly people (aged 65 and over) per 100 children under 15. It can be observed that there was little change in the ratio between men and women over the period analysed, but that women’s ratio is significantly higher than men. For women, there was no upward trend over the period analysed. The demographic old-age dependency ratio for men increased from 86 to 92.

Table 2. Demographic old-age dependency ratio (according to the Official Statistics Portal, 2023)

Gender	Year	2019	2020	2021	2022	2023
Total		131	132	134	134	134
Male		86	87	91	91	92
Female		178	179	180	180	178

Analysis of the Official Statistics Portal’s forecast data shows that the number of people aged 65 and over will increase, i.e. by 20.3% in 2024, and by 2024 they will account for 27.9% of the total population.

In summary, it is important to note that today’s demographic situation is one of an ageing society, and that some proportion of the population has certain impairments that hinder mobility and orientation, but that people are keen to take an active part in society and to be full-fledged members of it.



## 6. Lithuanian Experience in Implementation of Universal Design

It seems, that an individual with disability is naturally a subject to certain limitations. Today's world is based on the principle that every member of society should be able to participate fully in all social activities, the variety of which make up the different and multifaceted realities of life. This is regulated by various pieces of legislation that are having a different force. Therefore, in order to ensure the rights of persons with disabilities and their full expression, the UN defined the term universal design in Article 2 of the Convention in 2006 (United Nations Convention, 2006).

In 2021, Law No. I-2044 of the Republic of Lithuania on the Social Integration of Persons with Disabilities was adopted to amend Articles 2, 16, 18 and 20 of the Law on the Social Integration of Persons with Disabilities, and to supplement the Law with Article 25, which states that municipalities shall implement measures and projects for the social integration of persons with disabilities, for meeting the special needs of persons with disabilities by assessing their independence in everyday activities and providing personal assistance, for general and special social services, for creating conditions for the integration of persons with disabilities into the community, and for cooperating with associations of persons with disabilities and plan them in the municipal planning documents. This special document, which extends the disabled person's opportunities for a full life, foresees the availability of a personal assistant to help the disabled person with the necessary tasks and activities.

The Law on Construction of the Republic of Lithuania, adopted by the Seimas of the Republic of Lithuania (Consolidated version from 1-11-2022 to 31-12-2022), discusses the concept of universal design and interprets it as the form of the products and the environment in the form of products and environments, which can be used by children, adults, men, women, the elderly, the handicapped, and people of different ethnicities without any special adaptation.

According to the Lithuanian Disability Organisations Forum (2022), Lithuania still has limited opportunities for people with disabilities to fully participate in the world of activity. Universal design as a universally accessible and comfortable environment, with all its infrastructure, tools and services, is in its infancy, and there are cases where a disabled person is unable to reach the desired location, to access and physically move around the space on their own or even with the necessary assistance, as well as to use the services provided. There are still cases when the environment is created without following the idea of universal design, the requirements of legal acts are violated, the environment is not adapted to the needs of the disabled. This can be seen as a sign of the discrimination and stigmatisation of disabled people: they are singled out and judged negatively on the basis of their physical or mental attributes, and are therefore, in a sense, ignored, marginalised or, more generally, targeted for elimination.

The power of the individual is determined by many aspects. The power of a disabled person is particularly closely and directly linked to the attitudes of the external environment towards him or her as an individual. Public opinion and views are hardly a tangible reality, so it can be assumed that the legal apparatus operating in a country, the laws that are created and adopted, are the dominant ideological thought of the population of the country, an ideal to be aspired to, or even an existing position, reflecting a way of creating the reality of life.

Lithuania has international laws in place, which have led to the creation and further development of a legal framework that protects, defends and ensures the rights of people with disabilities, their inclusion and participation in public life in as many ways as possible. Baužienė (2023) argues that one of the most important is the idea of universal design, which aims to create not specialised spaces, but environments that are suitable for everyone, regardless of the characteristics that distinguish individuals.; in this way, people with disabilities are able to act and participate in a way that is authentically and uniquely engaging according to their personal interests.

According to the survey conducted by the Department of Persons with Disabilities under the Ministry of Social Affairs and Labour (2020), which aims to assess the level of accessibility of all institutions, it was found that the lowest scores were given to the level of information and communication technologies - 35%, stairs and lifts - 45%, the level of paths to the building, ramps - 47%, toilets and sanitary facilities - 49%. The highest rating was given to the adaptation of doors and windows - 70%. Educational institutions had the lowest level of adaptation of the physical environment - 42%, and elderships - 46%. The highest level of adaptation of the physical environment was identified in the institutions of Territorial Patients Funds - 87%, Disability and Disability Determination Services - 79%, State Territorial Planning and Construction Institutions - 77%.

The results showed that it is important to involve all stakeholders in the organisation of services, i.e. professionals and end-users. The results of the study showed that the needs of people with visual impairments are often overlooked when it comes to accessibility issues, while the needs of people with mobility impairments receive the most attention (Fatkulina, Staševičienė, 2020).

**7. The importance of universal design from the point of view of people with disabilities: a research discussion**

Summarising the survey data, differences of opinion emerged, as different types of disabilities, such as mobility impairments, visual impairments, and hearing impairments, require different things in adaptation of the environment. The study highlighted common objects, but approached them from different perspectives, which resulted in a variation of opinions. It is important to note that aspects of information presentation, communication and accessibility are very important for all disabilities.

Universal design principles for environmental accessibility need to cover all areas: building access, room layout, targeted information, competent staff. The physical environment and accessibility of the building (see Table 3), which includes parking and the most appropriate parking space as well as the convenient location of all the physical objects in the environment, are the most important issues for people with reduced mobility. It should be noted that in the case of severe mobility impairments, there is a need to make use of information technology and remote access to enable people with these disabilities to participate in various cultural events. Similarly, to the adaptation of the physical environment, the presentation of the information needs to be tailored considering the specific needs of the user providing a possibility for a person in a wheelchair or using another assistive device comfortably access the content independently. The illustration of the category of interpersonal communication (Table 4) indicates the level of the empathy that members of society have for a disabled person who does not always need help, but who, in each case, has an individual personal relationship that allows to understand and choose the most appropriate and targeted behaviour in a particular situation. As people with disabilities testify, ‘little by little, Lithuania is becoming open, accessible and empathetic’ (a person with mobility impairment).

Table 3. Attitudes of people with mobility disabilities (Prepared by the authors, based on the survey results)

Category	Subcategory	Illustration
Accessibility	Adaptation of buildings	„<...> difficulties when leaving home <...> “; „<...>the entrance is equipped, but the door opens with difficulty <...> “; „<...>some lifts are not working or have doors that are too narrow <...> “.
	Parking	„<...>sometimes, at some buildings, the markings for disabled spaces are blurred, just on the road, so you can't see them <...> “; „<...>disabled parking spaces are often occupied, which means there are not enough of them <...> “. „<...>some disabled parking spaces far from the entrance <...> “.
	Attending events	„<...>cannot see a concert or performance because is unable to attend due to a complex disorder; but they were broadcasted during the pandemic and could, for a fee, continue to be broadcasted <...> “.
Information	Information signs	„<...>I am in a wheelchair and the information and various signs are placed very high <...> “; „<...>mailbox screens and the windows are placed very high - I can't reach them all <...> “.
Interpersonal communication	Understanding	„<...>we had an event and one of the participants was sitting in a wheelchair and we offered to carry him but he said: "I can do it myself, I don't need help<...> “.

In the case of the visually impaired, there was a difference in opinions between the visually impaired and the blind. Blind people favour more information to be provided in Braille or audio form. Visually impaired people prefer the information to be in larger print. In keeping with the idea of universal design, the individual needs of both groups must be considered. Blind people find it difficult to find their way around new places and agree that audible signals at crosswalks are useful for crossing the street safely and for moving independently in urban spaces. Blind people acknowledge that audio information provided in museums is acceptable and would like to experience wider use of this practice.

Table 4. Attitudes of people with visual impairments (visually impaired and blind) (Prepared by the authors on the basis of the survey results)

Category	Subcategory	Illustration
Accessibility	Tactile surfaces	„<...> I'm happy, because it's easy to navigate in the streets <...> “;

Information	Audio indicators	<p>„&lt;...&gt; difficult to navigate following them if you don't know the place &lt;...&gt; “;</p> <p>„&lt;...&gt; I orient myself by memory or by the sound of the walking stick &lt;...&gt; “;</p> <p>„&lt;...&gt;I don't see the darkness because I remember how it was before &lt;...&gt; “.</p> <p>„&lt;...&gt;when you are warned at the crossing and you know how much time is left &lt;...&gt; “.</p>
	Independent access to information	<p>„&lt;...&gt; it's good that the numbers are big &lt;...&gt; “;</p> <p>„&lt;...&gt;it would be good to have more information in Braille &lt;...&gt; “;</p> <p>„&lt;...&gt; there could be audio information in the clinics, like it is in some museums &lt;...&gt; “;</p> <p>„&lt;...&gt; difficult to navigate the various tourist sites independently due to a lack of accessibly presented information &lt;...&gt; “.</p>
	Interpersonal access to information	<p>&lt;...&gt; you don't understand everything, and feel shy to ask &lt;...&gt; “;</p> <p>&lt;...&gt; information was read patiently, but I felt uncomfortably &lt;...&gt; “.</p>

People with hearing impairments require the least special adaptations (see Table 5). Written information and visual representation of it are important to them, as it gives individuals with these disabilities a sense of autonomy and the ability to meet their needs independently. It is important to note that people with hearing impairments are the most closed and/or isolated group, as they are limited by the language barrier, which, as if by itself, encourages them to choose activities and spaces in the physical environment where they do not have to be exposed to the rest of society. It could be argued that the independence of deaf people is, in a sense, both a cause and a consequence of their exclusion-isolation.

Table 5. Attitudes of people with hearing impairments (Prepared by the authors on the basis of the survey results)

Category	Subcategory	Illustration
Accessibility	Availability of information	<p>„&lt;...&gt; easy to navigate if visual information is available &lt;...&gt; “;</p> <p>&lt;...&gt; it's good to have a timer at the traffic lights so you know if you're crossing the street safely &lt;...&gt; “;</p> <p>„&lt;...&gt; most of the information you need is available on the internet, in written, on displays, on billboards, so it's easy to find, get to or navigate to the right place &lt;...&gt; “.</p>
Communication	Autonomous access	<p>„&lt;...&gt; if everything is written, no problem &lt;...&gt; “;</p> <p>„&lt;...&gt; I try to go to shops where there is self-service &lt;...&gt; “.</p>
	Interpersonal communication	<p>„&lt;...&gt; I worked briefly as a cashier in a shop, but it was difficult because I couldn't respond to customers' questions &lt;...&gt; “;</p> <p>„&lt;...&gt;it's good to be able to use a sign language interpreter in certain situations, because sign language is the only language that deaf people or our family members can speak &lt;...&gt; “;</p> <p>„&lt;...&gt; we often feel uncomfortable when we have to be with hearing people because we don't understand their language, we just guess &lt;...&gt; “.</p>

In Lithuania, the idea of universal design is being pursued: many buildings are equipped with entrances, lifts and tactile surfaces, and information is presented in a variety of different ways, using a range of technologies. There are still some aspects that could be improved: marking of parking spaces for disabled people, selecting the most appropriate location, the introduction of audible indicators, the installation of automatic doors, information accessibility and the creation of a physical environment that responds to the different individual needs of disabled. This would enable all members of society to participate fully in public life.

**Conclusions**

All of us have our own individual needs, determined by personal nature and socio-cultural environment. There has been a significant evolution of progressive thought, including the idea of universal design, in raising and reflecting on the question of equality in various ways to ensure the rights and freedoms of different and diverse individuals. Even though

strong efforts have been put to remove barriers and become an open and inclusive society, people with disabilities still face daily challenges that result in frustration, low self-esteem and lead to isolation.

The qualitative research allowed to identify both the positive and negative aspects of universal design implementation in Lithuania. The difference in needs based on the type of disability has been highlighted. Adaptation of the physical environment is the most important issue for people with mobility disabilities. In the case of visual impairment, audible indicators, tactile surfaces and information accessibility are the most important. People with hearing impairments are the most independent but also the most isolated group, limited by the language barrier. They are also concerned about information accessibility. Although the idea of universal design is being implemented in Lithuania, there are still physical barriers in the environment or problematic access to information. However, Lithuanian society is empathetic, open and supportive, which can be seen as an important characteristic in creating a universal public life for all.

## References

- [1] Badirova, I. M. (2022). Problems of Integration of Disabled People into Modern Society. *International Journal of Novel Research in Advanced Sciences (IJNRAS)*, Volume: 01 Issue: 05. Available at: <http://innosci.org>
- [2] Baužienė, Z. (2023). Neįgaliojo įsiliejimas į veiklos pasaulį. Vilnius: Kriventa leidybos namai.
- [3] Collins, A., Rentschler, R., Williams, K., Azmat, F. (2021). Exploring barriers to social inclusion for disabled people: perspectives from the performing arts. *Journal of Management & Organization*, 28, 308–328. Available at: <https://doi.org/>
- [4] Erdtman, E., Rassmus-Grohn, K., Hedvall, P. O. (2022). *Let us move beyond word battles and separatism: strategies and concerns regarding universal design in Sweden*. Equality, Diversity and Inclusion: An International Journal Vol. 41 No. 9, pp. 15-29 Emerald Publishing Limited 2040-7149 DOI 10.1108/EDI-04-2021-01
- [5] Fatkulina N., Staševičienė A. (2020). Paslaugų prieinamumo ir gaminių tinkamumo visiems Lietuvoje gyvenantiems vartotojams kuo platesniu mastu analizė.
- [6] Jung, Y.H.; Kang, S.H.; Park, E.-C.; Jang, S.-Y. (2022). Impact of the Acceptance of Disability on Self-Esteem among Adults with Disabilities: A Four-Year Follow-Up Study. *International Journal of Environmental Research and Public Health*. Available at: <https://doi.org/10.3390/ijerph19073874>
- [7] Jungtinių Tautų neįgalųjų teisių konvencija ir jos Fakultatyvus protokolai. (2006). *Valstybės žinios*, 2010-06-19, Nr. 71-3561. Available at: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.335882>
- [8] Lietuvos Respublikos statybos įstatymas. Suvestinė redakcija (2022-11-01–2022-12-31). *Valstybės žinios*, 1996-04-10, Nr. 32-788. Available at: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.26250/rqpeVoNqwc>
- [9] Lietuvos Respublikos neįgalųjų socialinės integracijos įstatymas. Suvestinė redakcija nuo 2022-09-01 iki 2022-12-31. Nr. XIV-215, 2021-03-25, paskelbta TAR 2021-03-31, i. k. 2021-06552. Available at: <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.2319/asr>
- [10] Lietuvos negalios organizacijų forumas. (2022). Žmonių, turinčių negalią, teisės Lietuvoje – negalios politikos analizė. Available at: [https://www.inf.lt/wp-content/uploads/2022/06/neigaliu\\_su\\_turiniu\\_Be-ISBN.pdf](https://www.inf.lt/wp-content/uploads/2022/06/neigaliu_su_turiniu_Be-ISBN.pdf)
- [11] Martínez-Medina, A., Morales-Calvo, S., Rodríguez-Martin, V., Meseguer-Sánchez, V., Molina-Moreno, V. (2022). Sixteen Years since the Convention on the Rights of Persons with Disabilities: What Have We Learned since Then? *International Journal of Environmental Research and Public Health*. 19, 11646. <https://doi.org/10.3390/ijerph191811646>
- [12] Müller, L., Ericsson, S., Hedvall, P.-O. (2022) *Visions of a City for All*. Resources, Choices and Factors Supporting and Impeding Universal Design in the Urban Development Process, *The Journal of Public Space*, 7(2), 63-78. DOI 10.32891/jps.v7i2.1486
- [13] Neįgalųjų reikalų departamentas prie Socialinės ir darbo ministerijos. (2020). Ataskaita dėl paslaugų prieinamumo patikros lapų duomenų patikrinimo, suvedimo ir konsultavimo paslaugų. [https://www.ndt.lt/wp-content/uploads/ATASKAITA\\_PATIKROS\\_LAPU\\_VERTINIMAS\\_2020.pdf](https://www.ndt.lt/wp-content/uploads/ATASKAITA_PATIKROS_LAPU_VERTINIMAS_2020.pdf)
- [14] Oficialios statistikos portalas. (2022). Available at: <https://osp.stat.gov.lt/statistika-apie-asmenis-su-negalia-rengiama-igyvendinant-nacionalinius-teises-aktus>
- [15] Orth, U., Robins, R. W. (2022). Is High Self-Esteem Beneficial? Revisiting a Classic Question. *American Psychologist*, Vol. 77, No. 1, 5–17. Available at: <https://doi.org/10.1037/amp0000922>
- [16] Silverman, D. (2010). *Interpreting qualitative data*. London: Sage Publications.
- [17] Smart, J. (2009). *Disability, society, and the individual*. Austin, TX: PRO-ED, Inc.
- [18] Jones, M. (2021). Disability and labor market outcomes. *IZA World of Labor*, 253. DOI: 10.15185/izawol.253.v2. Available at: <https://wol.iza.org/articles/disability-and-labor-market-outcomes/long>.
- [19] Tarvainen, M. and Hänninen, V. (2022). Disability and working-life citizenship. *Nordic Social Work Research*. Available at: <https://doi.org/10.1080/2156857X.2022.2032810>
- [20] UN Convention on the Rights of Persons with Disabilities (2006). Available from: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities/convention-on-the-rights-of-personswith-disabilities-2.htm>
- [21] UN Disability Inclusion Strategy (2019). Available from: [https://www.un.org/en/content/disabilitystrategy/assets/documentation/UN\\_Disability\\_Inclusion\\_Strategy\\_english.pdf](https://www.un.org/en/content/disabilitystrategy/assets/documentation/UN_Disability_Inclusion_Strategy_english.pdf)
- [22] UN Disability and Development Report (2018). Available from: <https://social.un.org/publications/UN-Flagship-Report-Disability-Final.pdf>
- [23] UN Universal Declaration of Human Rights (1948). Available from: <https://www.un.org/en/about-us/universal-declaration-of-human-rights>



# Exploring the Popularity of Cultural Heritage Education in Elementary School

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## Abstract

Cultural heritage holds significance as both a strategic asset and a valuable investment in social and cultural wealth. Constituting a vital component of a nation's identity, nurturing cultural heritage should commence right from an individual's earliest years. This conference submission presents the empirical research conducted among Slovenian primary school teachers at the elementary level. The study aimed to identify how popular cultural heritage content is among teachers and students. Results identify that teachers like to teach cultural heritage content. According to teachers, cultural heritage contents are popular among students. Teachers recognize overcrowded curricula, the lack of students' interest, and the location of an elementary school as significant obstacles to developing a positive and responsible attitude to cultural heritage. The results show that teachers believe that they are sufficiently trained to teach cultural heritage content, but there is still a tendency for additional training. Shorter teacher training courses focused on cultural heritage content lessons should be planned and implemented using modern didactic strategies that encourage students' activity, and they should be based on the constructivist theory of learning and teaching.

**Keywords:** cultural heritage, primary school, cultural capital, teachers.

## 1. INTRODUCTION

In today's world, where many changes are taking place in all areas of social life, the structure of work, and, last but not least, the education system, social knowledge is gaining importance. Quality social science knowledge promotes understanding, tolerance and solidarity between people, nations, races and religious groups. Globalization processes strongly mark social sciences in modern 21st-century society. Its importance lies in transferring knowledge, developing current values, and teaching individuals how to integrate into the community (Židan, 2004, 2015) acceptably. With all its contents and elements, the educational environment actively creates individuals' social and cultural capital in society.

### 1.1. Cultural capital

Bourdieu (2004) understands capital as all goods, material or symbolic, that are presented as rare, and we strive for them in a particular social formation. Bourdieu explains that "the capital that individuals can raise determines their life trajectory (their life opportunities); moreover, it also serves as a reproduction of class differences (Postone, LiPuma, and Calhoun (1993, p. 5). It distinguishes between symbolic (prestige, status, authority), economic (financial

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and other material resources) and social and cultural capital, which define individuals. Our paper focuses on cultural capital, which the educational environment can actively upgrade. Bourdieu (2004) points out three manifestations of cultural capital and explains that each has its logic of transmission, which significantly influences its accumulation. Fulcher and Scott (2011) summarize Bourdieu's definition of cultural capital, highlighting the correlation between an individual's social class, culture, and education. Cultural capital can thus be understood as a complex and extensive concept, as a form of capital that refers to an individual's cultural and social activities and the experiences associated with their cultural activity. The concept of cultural capital also includes the contents of cultural heritage, which we focus on in the continuation of the article.

### *1.2. Cultural heritage*

The Cultural Heritage Protection Act defines cultural heritage as "goods inherited from the past, which Slovenes, members of the Italian and Hungarian national communities and the Roma community and other citizens of the Republic of Slovenia define as a reflection and expression of their values, identities, ethnicity, religious and other beliefs, knowledge and traditions. Heritage includes aspects of the environment that arise from the interaction between people and space over time" (Cultural Heritage Protection Act, Article 1, point 2). "Cultural heritage must be managed in such a way as to ensure the greatest possible preservation of its cultural values for the future" (Cultural Heritage Protection Act, Article 36, point 1). Cultural heritage is part of the identity of every nation, and it is necessary to encourage the youngest to preserve it (Kostović-Vranješ, 2015). Schools and teachers can help raise awareness of the importance and preservation of cultural heritage (Čukelj, 2009).

Cultural heritage contents were very relevant in 2018, as the European Commission declared 2018 the European Year of Cultural Heritage. The European Year of Cultural Heritage aims to connect people and integrate society, create new jobs, and promote sustainable economic and social development through education on cultural heritage. The European Cultural Heritage Summit was held in Berlin on 22 June 2018, when a pan-European debate on cultural heritage policies took place, along with forming the "Berlin Call", among other things. The Berlin Call derives from the expertise, enthusiasm and involvement of many citizens and communities who care for cultural heritage and work dedicatedly as professionals or volunteers to ensure the transmission of our heritage to future generations. What is related to our contribution, however, is that the Berlin Call of the EU institutions calls for full recognition of cultural heritage as a strategic resource and priority in the new generation of policy agendas and the new EU multiannual financial framework (2021-2027) as an urgent investment in European human and cultural capital (Republic of Slovenia, Ministry of Culture, 2018).

The article focuses on the popularity of teaching cultural heritage content at the primary level of an elementary school in the Republic of Slovenia. According to Čukelj (2009), schools and teachers can help raise awareness of the importance and preservation of cultural heritage.

## **2. EMPIRICAL RESEARCH**

### *2.1. Research purpose*

The purpose of the study was to determine the popularity of cultural heritage education in elementary schools as a factor that can contribute to better development of cultural capital.

### *2.2. Methodology*

The approach to empirical research adopted for this study was a non-experimental descriptive approach.

### *2.3. Research Sample*

The composition of the research sample (395) was primarily comprised of first-grade teachers, totalling 106 individuals, constituting 26.8% of the total participants. Teachers from the third grade accounted for 19.5% (77 teachers), those from the fourth grade represented 19.2% (76 teachers), and second-grade teachers made up 18.5% (73 teachers). The minor representation was observed among fifth-grade teachers, with a count of 63, making up 15.9% of all participants.

Regarding the teaching environment, the sample encompassed 156 teachers from urban schools, making up 39.5% of the total participants, and 239 teachers from rural schools, representing 60.5% of the participants.

Considering the years of service of the participating teachers, the majority of respondents (30.1%) had been teaching in primary schools for 11 to 20 years. Teachers with 31 or more years of service constituted 29.1% of the

sample, while those with 21 to 30 years of service accounted for 26.3%. A minor portion, comprising 14.4% of the research sample, had up to 10 years of teaching experience in primary schools.

2.4. Data collection process

We developed a comprehensive survey questionnaire that encompasses two distinct sections. The initial section collected general information about the teachers, encompassing variables such as their years of teaching experience, the grade level they instruct, and their primary school setting. This segment aimed to gain insights into the broader context of the surveyed teachers' backgrounds.

The second section of the questionnaire encompassed a diverse array of question types, including dichotomous questions, multiple-choice questions, ranked-answer questions, clustered questions, questions prompting verbal responses, questions involving graded answers, and inquiries that combined judgments with levels of assessment. To ensure the validity of the questionnaire, we rigorously reviewed and pre-tested it on a subset of respondents. Additionally, the reliability aspect was incorporated into the designing questions process, where meticulous attention was given to furnishing explicit instructions and precise, unambiguous queries.

Throughout the data processing phase, we maintained reliability by cross-referencing the responses against content-related inquiries.

2.5. Data processing procedures

We gathered the data using a survey questionnaire designed for primary school class teachers. We acquired the web addresses of primary schools from the official Ministry of Education, Science, and Sport website. Subsequently, we dispatched emails to these schools containing a hyperlink to an online survey hosted at <https://www.lka.si/>. Upon the conclusion of the survey process, our database had a total of 395 filled-out questionnaires.

The data obtained from the questionnaires were analysed by using the SPSS statistics programme. For data processing, we used basic descriptive statistics and frequency distribution.

3. RESULTS

3.1. How popular is teaching cultural heritage content among primary-level teachers?

Table 1. Number (f) and structural percentages (f%) of the surveyed teachers' responses on the popularity of teaching cultural heritage contents

The popularity of teaching cultural heritage contents	f	f %
1...Don't like	0	0 %
2	4	1,0 %
3	40	10,1 %
4	133	33,7 %
5...Like	218	55,2 %
Total	395	100,0 %

The results show that more than half of the teachers, more precisely 55.2% of the surveyed teachers, really like to teach cultural heritage content. 33.7% of surveyed teachers like to teach cultural heritage content. 10.1% of the surveyed teachers are undecided, so they are neither reluctant nor like to teach cultural heritage content. Only four surveyed teachers, representing 1% of surveyed teachers, do not like teaching cultural heritage content. None of the surveyed primary-level teachers stated that they were reluctant to teach cultural heritage content.

In this question, we used the  $\chi^2$  test to check whether there are statistically significant differences between primary-level teachers in the popularity of teaching cultural heritage content according to the grade, teachers' years of experience, and the teaching environment.

The results show that there are statistically significant differences ( $\chi^2 = 32.405, P = 0.000$ ) according to the years of experience of teachers in the popularity of teaching cultural heritage content, as teachers that have many years of teaching experience preferred to teach cultural heritage contents than their less experienced colleagues. The result of

the  $\chi^2$  test also shows that there are no statistically significant differences in the popularity of teaching cultural heritage contents according to the grade and also the teaching environment.

### 3.2. How popular are cultural heritage contents among students, according to teachers?

In this research question, teachers responded on a five-point scale, so 1 meant that they felt that cultural heritage contents were not popular with students. 5 meant they felt that cultural heritage contents were very popular with students.

Table 2. Number (f), structural percentage (f%), and mean ( $\bar{x}$ ) of the answers of the surveyed teachers about the popularity of cultural heritage content among students

The popularity of cultural heritage content among students	f	f %	$\bar{x}$
1	0	0.0%	3,94
2	8	2.0%	
3	84	21.3%	
4	226	57.2%	
5	77	19.5%	
Total	395	100.0%	

The results show that more than half of the surveyed teachers (57.2%) believe that cultural heritage contents are popular with students at the primary level. None of the teachers chose the answer that cultural heritage contents are unpopular with students. 21.3 percent of teachers believe cultural heritage contents are neither popular nor unpopular with students. 19.5 percent of teachers believe cultural heritage contents are very popular with students. The results show no statistically significant differences between teachers according to the years of experience of teachers, the grade and the environment in which the elementary school is located.

### 3.3. What is the biggest obstacle for teachers in developing students' positive and responsible attitudes towards cultural heritage?

In this research question, teachers chose among the suggested answers and could also choose multiple answers.

Table 3. Number (f) and structural percentages (f%) of the surveyed teachers' answers about the biggest obstacle in developing a positive and responsible attitude towards cultural heritage among students

Answers	f	f%
Non-participation of parents	39	9.9%
School's location	59	14.9%
Teacher don't have enough information	51	12.9%
Students' lack of interest during lessons	62	15.7%
Curriculum overcrowding	290	73.4%
Nothing	74	18.7%
Other	14	3.5%

Table 3 shows that most teachers marked the answer Curriculum overcrowding, which means that teachers do not have enough time to develop a positive and responsible attitude towards cultural heritage in students due to curriculum overcrowding. We can also see that 18.7% of teachers said that they do not feel hindered in developing a positive and responsible attitude towards cultural heritage in students. However, most of them chose the answer about the overcrowding of the curriculum. 15.7% of teachers believe that students' lack of interest during lessons hindered them from developing a positive and responsible attitude towards cultural heritage. 14.9% of teachers believe the school's location hinders them 12.9% of surveyed teachers feel they do not have enough information. 9.9% of teachers believe

that they cannot develop a positive and responsible attitude towards cultural heritage in students due to the non-participation of parents.

### 3.4. How qualified are teachers to teach cultural heritage content?

In this research question, we were interested in whether teachers feel qualified enough to deal with cultural heritage content and whether they might want to attend any additional training on this topic. In this question, teachers had to define whether they feel sufficiently qualified to teach cultural heritage on a scale from 1, which meant I am not qualified, to 5, which meant I am very qualified. The results show that most teachers (59.5%) believe they are qualified to deal with cultural heritage content. 13.4% of teachers believe that they are highly qualified, and 25.1% of teachers are undecided, so they are neither not qualified nor highly qualified.

Finally, we asked the teachers if they would like to attend additional training on teaching cultural heritage content. As many as 73.7% of teachers would like to participate in such additional training. The results show that teachers want additional education in the form of workshops the most (61.0%). 17.0% of teachers want further education in seminars, and 13.0% of teachers want additional education in the form of online education.

## 4. DISCUSSION

In the research we presented in this paper, we were interested in the popularity of teaching cultural heritage content at the primary level of primary education as a factor that can contribute to better development of cultural capital.

The results show that more than half of teachers like teaching cultural heritage content very much, and a third of teachers like teaching it. Teachers with several years of service in teaching prefer to teach cultural heritage content more than their colleagues with less years of service. The results indicate general condition, which may result from several factors. It can be assumed that teachers with several years of service already established several contacts with various local organizations and societies, and they consider that organization of cultural heritage lessons that is more experientially oriented, as advised by didactic recommendations, means no additional effort for them as it might be for beginner teachers. For teachers with several years of service, it may be easier to have lessons outside a classroom, as they can, based on their experience, anticipate and prevent many obstacles and barriers that would have prevented them from such lessons. Beginner teachers do not have as much experience yet, and they may not feel so independent in conducting cultural heritage content lessons outside a classroom and, consequently, do not like to teach them so much. It would be rational to explore the factors that are currently only anticipated and assumed in an additional and more detailed survey on the popularity of cultural heritage content.

According to the results, more than half of the surveyed teachers believe that cultural heritage contents are popular in students at 1st level of elementary education. When comparing the results with the results of the previous question, we find that teachers estimate for themselves that they prefer cultural heritage content more than it is liked by students, as estimated by teachers. In any case, it would be reasonable to upgrade the research in this question by examining also views of students. Namely, these answers represent the opinions and views of teachers on the popularity of cultural heritage content among students, which, however, may prove to be inaccurate. Given that teachers mostly consider cultural heritage content to be popular among students, the result of the next research question showing that one fifth of the surveyed teachers believe that they are not hindered by anything in developing a positive and responsible attitude to cultural heritage in lessons was expected, since they probably have no trouble in dealing with cultural heritage contents.

The results indicate that many teachers believe there are obstacles to developing a positive and responsible attitude to cultural heritage. Most teachers believe that the biggest obstacle to developing a positive and responsible attitude to cultural heritage in a student is related to overcrowded curricula. The overcrowded curriculum is an answer that could be considered to be quite populist in modern times. Therefore, it would be reasonable to objectively present here an example of an old and a new curriculum after the curricular renewal for the environmental studies subject. When reviewing and counting the written global learning objectives of the subject, we can find that the new curriculum was refined, and some of the objectives have been omitted or transformed. As Hus (2016, p. 71) wrote, "the Environmental Studies subject curriculum is built on recent knowledge on curricular theory, developmental psychology, and didactics. Learning-target planning with the elements of process planning brings significant progress in the subject development ". If the goals are written in this way, they allow teachers more freedom and exercise their professional competence.

It should be added to this analysis that a more thorough interpretation would require an investigation on which school subjects at the 1st elementary school level are considered to be overcrowded according to teachers. Based on this information, the assumption that curricula are overcrowded could be refuted or confirmed. The fact that we did not specifically ask in the questionnaire which individual school subject they think the curricula (Budnar et al., 2011; Kolar et. al, 2011) are overcrowded, we now recognize as a shortcoming and an opportunity for further research.

Teachers indicate as other obstacles hindering the development of student's positive and responsible attitude to cultural heritage a lack of interest shown by students during lessons and the location of the elementary school where they teach. Location of the elementary school can probably be associated with the lack of spots for teaching outside the classroom that are accessible to teachers at a daily basis, and that would allow them to teach cultural heritage content more authentically. In the future, it would be reasonable to complement this question with a sub-question in order to obtain key information and an explanation of what precisely was meant by teachers being hindered by the location of the primary school in developing the student's positive and responsible attitude to cultural heritage. We can assume that there might be no suitable forms of cultural heritage in their local environment that could be used to achieve the cultural heritage-related goals in the curriculum and that the organization of lessons using some other didactic strategy, other than frontal classical teaching, by which they would achieve the targets of cultural heritage, might be demanding in logistic terms. We can conclude that the proximity of institutions, societies, and museums is crucial for conducting lessons outside the classroom.

Regarding students' lack of interest in learning about cultural heritage contents, the results of our research can be linked to the concept of learning motivation, as the type and level of motivation determine the thoroughness of learning and the quality of results achieved (Marentič Požarnik, 2019). Based on several empirical studies, it has been established and empirically proven that motivation is significantly related to students' learning (Juriševič, Razdevšek Pučko, 2006). We can talk about the lack of learning motivation when students are not interested in the lesson, they chat, dream, etc., during the lesson. Let us assume here that the surveyed teachers, playing the role of effective teachers, used external motivation and did everything to attract students' interest and affection for learning and fostering a positive and responsible attitude towards cultural heritage, and that the problem occurred in students' internal motivation. Although the division into external and internal motivation is too rigid, as both types of motivation intertwine and influence each other, we can highlight the sources of internal motivation that should receive more attention in the future. According to Marentič Požarnik (2008), the sources of internal motivation include curiosity, a desire to learn in general, interest in a specific field, a tendency to realize one's potential, to create, and to manage a specific field of knowledge or skills. Therefore, the teacher and the school must find a way to develop students' internal motivation, which has to be individualized in line with the principles of the constructivist theory of learning and teaching (Martin, 2001; Maxim, 2010). Furthermore, it would make sense to examine which methods of external motivation are used by teachers, which are the sources of motivation in the social environment, and whether they could still be upgraded.

## 5. CONCLUSION

Consequently, we came to the following findings:

- Teachers like to teach cultural heritage content.
- According to teachers, cultural heritage contents are popular among students.
- Teachers recognize overcrowded curricula, the lack of students' interest, and the location of an elementary school as significant obstacles to developing a positive and responsible attitude to cultural heritage.
- Teachers believe to be sufficiently qualified to deal with cultural heritage content; nevertheless, some teachers would like to attend additional training in the form of workshops.

Based on the findings of our empirical research, we suggest the following activities as an upgrade to the existing practices that can, among other things, increase the cultural capital of students:

- extending the research to the research sample of students is considered the only way to confirm or refute teachers' views concerning the popularity of cultural heritage content among students, and to check the effectiveness of their teaching forms and methods;
- encouraging individualized sources of internal motivation for learning in students and developing positive and responsible attitude to cultural heritage in students;

- it would be reasonable to plan and carry out a more comprehensive analysis of curriculum overcrowding, which could reasonably refute or confirm teachers' view that school curricula are overcrowded, and therefore prevent them to teach cultural heritage content to the extent they want;
- shorter teacher training courses focused on cultural heritage content lessons should be planned and implemented, using modern didactic strategies that encourage students' activity and they should be based on constructivist theory of learning and teaching and
- the teachers' wish for additional education in teaching cultural heritage should be introduced to the providers of teacher training programs, who would design and conduct workshops on teaching cultural heritage at the grade level to their professionally trained staff.

## References

- [1] Bourdieu, P. (2004). Oblike kapitala. In F. Adam & M. Tomšič (Eds.). *Kompelij socioloških teorij*, (p. 311–324). Študentska založba.
- [2] Budnar, M., Kerin, M., Umek, M., Rztresen, M in Mirt, G. (2011). *Učni načrt. Program osnovna šola. Družba*. Ministrstvo za šolstvo in šport, Zavod RS za šolstvo.
- [3] Čukelj, Z. (2009). Mogućnosti stjecanja znanja i spoznaja o prirodnoj i kulturnoj baštini u osnovnim školama Republike Hrvatske. *Socijalna ekologija*, 18 (3-4), 267–288.
- [4] Fulcher, S., Scott, J. (2011). *Sociology*. 4th ed. Oxford, Oxford University Press.
- [5] Hus, V. (2016). *Od stvarnega pouka do predmeta spoznavanje okolja: visokošolski učbenik*. Pedagoška fakulteta.
- [6] Juriševič, M. & Razdevšek-Pučko, C. (2006). Učna motivacija mlajših šolskih otrok. In V. Medved Udovič, M. Cotič in D. Felda (Eds.) *Zgodnje učenje in poučevanje otrok 1* (p. 75–90). Založba Annales
- [7] Kolar, M., Krnel, D. in Velkavrh, A. (2011). *Učni načrt. Program osnovna šola. Spoznavanje okolja*. Ministrstvo za šolstvo in šport, Zavod RS za šolstvo.
- [8] Kostović-Vranješ, V. (2015). Baština-polazište za promicanje odgoja i obrazovanja za održivi razvoj, *Školski vjesnik*, 64 (3), 439–452.
- [9] Marenčič-Požarnik, B. (2019). *Psihologija učenja in pouka: od poučevanja k učenju (2nd edition)*. DZS.
- [10] Marentič Požarnik, B. (2008). Konstruktivizem na poti od teorije spoznavanja do vplivanja na pedagoško razmišljanje, raziskovanje in učno prakso. *Sodobna pedagogika*, 59 (125), 4,28–51)
- [11] Martin, D. J. (2001). *Constructing Early Childhood Science*. Delmar Thomson Learning.
- [12] Maxim, G. W. (2010). *Dynamic Social Studies for Constructivist Classrooms*. Pearson Education, Inc.
- [13] Postone, M., LiPuma, E. in Calhoun, M. (1993). Introduction: Bourdieu and Social Theory. In C. Calhoun, C. J., LiPuma, E. in Postone, M. (ur.). *Bourdieu – Critical Perspectives*. UCP.
- [14] Republic of Slovenia, Ministrstvo za kulturo (2018). V Berlinu razprava o ambicioznem evropskem akcijskem načrtu za kulturno dediščino. Retrieved: [www.mk.gov.si/si/medijsko\\_sredisce/novica/7637/](http://www.mk.gov.si/si/medijsko_sredisce/novica/7637/)
- [15] Cultural Heritage Protection Act. <http://pisrs.si/Pis.web/pregledPredpisa?id=ZAKO4144>
- [16] Židan, A. (2004). *Za kakovostnejša družboslovna znanja. Didaktični in znanstveni prispevki*. Fakulteta za družbene vede.
- [17] Židan, A. (2015). *Temeljne značilnosti postmoderne didaktike družboslovja*. Fakulteta za družbene vede.

# Can the Tasks in the Environmental Studies Textbooks Promote Learning Outside the Classroom?

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## Abstract

The pedagogical emphasis in environmental studies classes lies in enabling pupils to achieve learning objectives through active engagement. These learning outcomes are realized via diverse practical undertakings, especially when educators employ operational-practical teaching methodologies during lessons. The category of operational-practical teaching methods encompasses a spectrum of techniques, including research-based approaches, hands-on practices, physical movements and activities, written exercises, artistic drawings, and interactive plays. In contemporary education, the textbook is essential to the methodological and didactic resources that complement classroom instructions. Our research focused on the tasks in textbooks that predict lessons outside the classroom, i.e., tasks oriented towards operational-practical learning methods. The results showed that the tasks are most often carried out in the classroom in all three grades. Outside the classroom, tasks are most often carried out in nature in Grade 1, while in Grades 2 and 3, tasks outside the classroom are most often carried out in the pupil's home.

**Keywords:** teaching, outside the classroom, textbook, students, didactics

## 1. INTRODUCTION

The textbook is the fundamental teaching material that helps pupils achieve the educational objectives and knowledge standards written in the curriculum. Each textbook is linked to a school subject or module and education level. It may be in printed, electronic or printed and electronic formats. The textbook's content shall be didactically, methodically organised, graphically, and visually designed. The structure and content of a textbook enable students to acquire different types and levels of knowledge and to learn independently (Rules on the Validation of Textbooks, 2015). Today, the textbook is integral to the methodological and didactic material accompanying the educational instruction process. The textbook tasks can be varied and can promote the use of different teaching methods and didactic strategies.

## 2. TEACHING ENVIRONMENTAL STUDIES

Environmental studies is a subject that combines content from different scientific disciplines. In environmental studies, pupils learn basic concepts, which they then build on in science, technology and social studies in the upper

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grades and in science, technology and social studies in the upper grades (Kolar et al., 2011). Environmental studies lessons should be designed in such a way as to develop children's curiosity and lead them to think scientifically. We encourage pupils to explore, observe and make sense of the world in which we live. Environmental lessons should be tailored to the pupils' interests, abilities and experience. It should enable pupils to participate actively in the learning process. Pupils should be given opportunities to learn about their environment through practical activities, e.g. dressing up, preparing food, drawing shadows, etc. Through these activities, pupils develop specific processes - observation, identifying features through experiments, classifying, ordering, communicating, predicting and measuring. Pupils actively acquire knowledge, which in turn affects their understanding (Ivanuš Grmek et al., 2009).

Plenty of research shows the importance of active learning, which has a holistic, mental, and emotionally activating effect on the learner. Learning is much more successful when learners can search, think and work independently in a group and pose and test hypotheses. This kind of learning results in more lasting knowledge that can be applied in new situations, enabling students to understand themselves and the world (Marentič Požarnik, 2019). Active learning is reflected in the methods of education. The focus is on the acquisition of knowledge through the learner's direct activity and the use of different resources: discovery, self-creation of expertise, developing own methods of acquiring knowledge, the ability to analyze the validity of the acquired knowledge, self-organization and self-control (Blažič et al., 2003).

Valenčič Zuljan and Kalin (2020) call methods based primarily on the learner's practical activity operational-practical learning methods while emphasizing the learner's mental activity. The latter implies that learners are not only engaged in functional activity but are also mentally active. The methods that emphasize students' practical activity include students' independent performance of experiments, classification of objects and phenomena, problem-solving, measurement, making practical products, making notes, diagrams and other graphic and pictorial records, practical activities (microscopic, sanding, cutting, singing, sports activities, dance activities, dramatizations, role-plays, etc.). In all of these activities, we distinguish between different levels of independence in the pupils. The teacher can give instructions to the pupils, who can then carry out the activities independently. The teacher may also explain all the procedures in advance and the pupils carry out the assigned activities independently. A third option is for the learners to define the procedures and carry out the activities independently.

### *2.1. Textbooks for Environmental studies*

Teachers at all levels of education choose textbooks primarily for their content and methodological and tactical design. When choosing textbooks, teachers teaching at the elementary level consider the influence of colleagues, the impact of the head teachers or the professional group opinion, the usefulness of the accompanying manual and the price of the textbook among the important factors for selecting a textbook. The fewest elementary education teachers consider the possible recommendations of other primary school teachers when selecting a textbook (Ivanuš Grmek et al., 2021).

For the subject Environmental studies, teachers have access to several different sets of textbooks from different publishers, which help to achieve the learning objectives. Until the 1990s, when the subject of environmental studies was still called learning about nature and society, teachers did not have textbook sets at their disposal. Then came first the textbook, then the workbook, the method manual and finally, the additional components of the textbook sets. Today, teachers can choose between textbook sets from different publishers in environmental studies. The choice of a textbook set is also influenced by the presentation of each textbook set, the advice of other teachers, the textbook fund and the influence of the school or the head teacher (Hus and Čagran, 2008). Hus and Čagran (2008), in a study which included 63 teachers and was focused on the didactic characteristics of textbook sets in the subject of Environmental Studies, also determined the representation of teaching methods in a selected textbook set from three different publishers (Z1, Z2, and Z3). Based on the results, they concluded that the textbook sets emphasize traditional methods such as explanation, discussion, demonstration, and work with text. However, the textbook sets cover a much lesser extent of modern teaching methods (constructivist). According to teachers, project work and fieldwork are the least represented in the textbook sets. Depending on the publishers, there was a difference only in the experimental and laboratory methods. Teachers using the Z3 textbook set consider that this method is sufficiently frequent (87.1%) and the least frequent teachers of the first publishing house consider that this method is sufficiently frequent (54.5%).

The textbook tasks can be varied and can promote the use of different teaching methods and didactic strategies. In this paper, we focus on the tasks that promote the implementation of lessons outside the classroom in environmental education textbooks.

### 3. RESEARCH

#### 3.1. Research purpose

The study examined the tasks in the textbooks for Environmental studies encouraging operational-practical learning methods outside the classroom. We focused on the four publishers with the largest market share in Slovenia. The aim is to investigate to what extent and in what ways the textbook contains tasks that encourage operational-practical work - work outside the classroom.

#### 3.2. Methodology

The approach to empirical research adopted for this study was a non-experimental descriptive approach.

#### 3.3. Research sample

The textbooks included in the research are those we assume have the biggest market share in Slovenia.

#### 3.4. Data collection process

We looked at textbooks from four publishers published since 2011 and approved by the Council of Experts of the Republic of Slovenia.

The instrumentation was compiled from the criteria, which allowed us to analyze the tasks leading to operational-practical work. We identified the location where the task is carried out and noted the page in the textbook where the task is located.

#### 3.5. Data processing procedures

The data were processed by grade. First, we collected and aggregated data from all four publishers for grade 1, then for grade 2 and finally for grade 3.

The publishers were marked A, B, C and D.

### 4. RESULTS

In the following section, we present the results by grade.

#### 4.1. Grade 1

Table 1. Overview of the analysis of the results on the task space for operational-practical learning methods by the publisher for grade 1

		Grade 1					
		Publisher	A	B	C	D	Total
<b>Environment</b>	<b>Out of classroom</b>	In nature (forest, meadow, garden)	2 (11.11 %)	1 (33.33 %)	2 (6.67 %)	2 (2.86 %)	<b>7 (5.79 %)</b>
		Pupil's home	2 (11.11 %)	0 (0.00 %)	0 (0.00 %)	1 (1.43 %)	<b>3 (2.48 %)</b>
		Other facilities (fire house, theatre, etc.)	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)	<b>0 (0.00 %)</b>
		Other school premises/school	1 (5.56 %)	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)	<b>1 (0.83 %)</b>

	playground/ yard				
<b>In the classroom</b>	13 (72.22 %)	2 (66.67 %)	28 (93.33 %)	67 (95.71 %)	<b>110 (90.91 %)</b>
<b>Total</b>	<b>18 (100.00 %)</b>	<b>3 (100.00 %)</b>	<b>30 (100.00 %)</b>	<b>70 (100.00 %)</b>	<b>121 (100.00 %)</b>

Table 1 shows that, for Publisher A, the tasks that are oriented towards operational-practical learning methods are most often carried out in the classroom. There are 13 such tasks (72.22 %). Five tasks are carried out outside the classroom. Of these tasks, two are carried out in the pupil's home (11.11%), two (11.11%) in nature, and one (5.56%) in other areas of the school.

An example of a task carried out outside the classroom (in nature) is for pupils to create a garden. They bring different seeds or plant parts (leaves, stems) to school and plant them. Together they create a garden (Šefer and Kumše, 2015, p. 59).

Table 1 shows that, for Publishing Company B, tasks that focus on operational-practical learning methods are most often carried out in the classroom. Two (66.67%) of the tasks are of this type. One task (33.33%) is carried out outside the classroom or in nature.

Table 1 shows that, for Publishing House C, the tasks oriented towards operational-practical learning methods are most often carried out in the classroom. There are 28 such tasks (93,33 %). Two tasks (6,67 %) are carried out outside the classroom. Both of these two tasks are carried out in the open air.

An example of a task that is carried out outside the classroom (in nature) is a task in which students find an oak leaf in the forest and draw it (Krnjel et al., 2015, p. 21).

Table 1 shows that, for Publisher D, the tasks that are oriented towards operational-practical learning methods are most often carried out in the classroom. There are 67 such tasks (95.71 %). Three tasks are carried out outside the classroom. Of these, two tasks (2.86%) are carried out in nature and one task (1.43%) is carried out at the pupil's home.

An example of a task carried out outside the classroom (in nature) is a task where pupils observe what they see in nature. To observe, they need binoculars, a magnifying glass, suitable footwear, a notebook and a pen. They draw what they observe in their notebook (Skribe Dimec et al., 2012, p. 83).

#### 4.2. Grade 2

Table 2. Overview of the analysis of the results on the task space for operational-practical learning methods by the publisher for grade 2

		<b>Grade 2</b>					
		<b>Publisher</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Total</b>
<b>Environment</b>	<b>Outside the classroom</b>	In nature (forest, meadow, garden)	3 (14.29 %)	0 (0.00 %)	0 (0.00 %)	1 (11.11 %)	<b>4 (6.67 %)</b>
	<b>m</b>	Pupil's home	3 (14.29 %)	0 (0.00 %)	3 (18.75 %)	2 (22.22 %)	<b>8 (13.33 %)</b>
		Other facilities (fire house, theatre, etc.)	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)	<b>0 (0.00 %)</b>
		Other school premises/school playground/yard	0 (0.00 %)	1 (7.14 %)	0 (0.00 %)	0 (0.00 %)	<b>1 (1.67 %)</b>

<b>In the classroom</b>	15 (71.43 %)	13 (92.86 %)	13 (81.25 %)	6 (66.67 %)	<b>47 (78.33 %)</b>
<b>Total</b>	<b>21 (100.00 %)</b>	<b>14 (100.00 %)</b>	<b>16 (100.00 %)</b>	<b>9 (100.00 %)</b>	<b>60 (100.00 %)</b>

Table 2 shows that, for Publisher A, the tasks in the textbook that focus on operational-practical learning methods are mostly carried out in the classroom. There are 15 such tasks (71.43 %). Six tasks are carried out outside the classroom. Of these, three tasks (14.29%) are carried out in nature, and three (14.29%) are carried out in the pupil's home. An example of a task carried out outside the classroom (in nature) is a task in which pupils collect various autumn leaves and fruits. Pupils collect different autumn leaves and fruits. They name the fruits and identify which tree or bush they belong to. They answer the question "Which fruits and berries are food for humans or animals". What will be made from the waste leaves." (Grošelj and Ribič, 2013, p. 21).

Table 2 shows that for Publisher B, the tasks in the textbook that focus on operational-practical learning methods are mostly carried out in the classroom. There are 13 such tasks (92.86 %). One task (7.14 %) is carried out outside the classroom or in other areas of the school. An example of a task carried out outside the classroom (in other areas of the school/playground/yard) is a task in which pupils try out a swing. The students use the swing to see which student is heavier or lighter (Hergan et al., 2015, p. 52).

Table 2 shows for Publisher C that the tasks in the textbook that focus on operational-practical learning methods are most often carried out in the classroom. There are 13 such tasks (81.25%). Three tasks (18.75%) are carried out outside the classroom or in the pupil's home. An example of a task that takes place outside the classroom or in the pupils' home is one in which pupils sort kitchen tools. At home, they find different kitchen tools and classify them into those used to separate mixtures and those used to stir. They then draw or write the classification in a table (Krnjel et al., 2016, p. 18).

Table 2 shows for Publisher D that the tasks in the textbook that focus on operational-practical learning methods are mostly carried out in the classroom. There are six such tasks (66.67 %). Three tasks are carried out outside the classroom. Of these, two tasks (22.22%) are carried out at the pupil's home and one (11.11%) is done in nature. An example of a task carried out outside the classroom or in the pupil's home is a task in which pupils look for hazardous substance labels. Pupils look for hazardous substances found in the kitchen and bathroom. They write the labels in a notebook and what they mean (Skribe Dimec et al., 2013, p. 41).

### 4.3. Grade 3

Table 3. Overview of the analysis of the results on the task space for operational-practical learning methods by the publisher for grade 3

<b>Grade 3</b>		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Total</b>
<b>Publisher</b>	<b>Environment</b>					
<b>Outside the classroom</b>	In nature (forest, meadow, garden)	0 (0.00 %)	1 (50.00 %)	7 (14.00 %)	2 (6.67 %)	<b>10 (7.58 %)</b>
	Pupil's home	6 (12.00 %)	0 (0.00 %)	5 (10.00 %)	2 (6.67 %)	<b>13 (9.85 %)</b>
	Other facilities (fire house, theatre, etc.)	3 (6.00 %)	0 (0.00 %)	5 (10.00 %)	4 (13.33 %)	<b>12 (9.10 %)</b>
	Other school premises/school playground/yard	6 (12.00 %)	0 (0.00 %)	0 (0.00 %)	0 (0.00 %)	<b>6 (4.55 %)</b>

<b>In the classroom</b>	35 (70.00 %)	1 (50.00 %)	33 (66.00 %)	22 (73.33 %)	<b>91 (68.94 %)</b>
<b>Total</b>	<b>50 (100.00 %)</b>	<b>2 (100.00 %)</b>	<b>50 (100.00 %)</b>	<b>30 (100.00 %)</b>	<b>132 (100.00 %)</b>

Table 3 shows that, for Publisher A, the tasks in the textbook that focus on operational-practical learning methods are mostly carried out in the classroom. There are 35 such tasks (70,00 %). 15 tasks are carried out outside the classroom. Of these, six tasks (12.00%) are carried out at the pupil's home and six tasks (12.00%) are carried out in other areas of the school or in the school playground or courtyard. Three tasks (6.00%) of these are carried out in other facilities. An example of a task carried out outside the classroom (in the pupil's home) is a task in which pupils investigate which diseases they have been vaccinated against and which injuries they have sustained. They discover which infectious diseases they have already fought off (Grošelj and Ribič, 2016, p. 64).

Table 3 shows that, for Publisher B, the two tasks in the textbook that focus on operational-practical learning methods are carried out in one case (50.00%) in the classroom and in one case (50.00%) outside the classroom, or more specifically, in nature.

Table 3 shows that, for Publisher C, the tasks in the textbook that focus on operational-practical learning methods are mostly carried out in the classroom. There are 33 such tasks (66,00 %). 17 tasks are carried out outside the classroom. Of these, seven tasks are carried out in nature (14.00%), five tasks (10.00%) at the pupil's home and five tasks (10.00%) in other facilities.

An example of a task that takes place outside the classroom or in nature is one in which students observe animal tracks. An example of a task carried out outside the classroom or in the pupils' home is a task in which pupils observe household appliances. Students choose three household appliances at home. They find out in which factory they were made and in which country the factory is located. They write down the information they find in a notebook (Krnjel et al., 2018, p. 12).

Table 3 shows for Publisher D that the tasks in the textbook that focus on operational-practical learning methods are mostly carried out in the classroom. There are 22 such tasks (73.33 %). Eight tasks are carried out outside the classroom. Of these, four tasks are carried out in other facilities (13.33%), two tasks (6.67%) in nature and two tasks (6.67%) in the pupil's home.

An example of a task carried out outside the classroom or in other facilities is when pupils visit a market or a fruit and vegetable shop. The pupils investigate the nearest market or fruit/vegetable shop in the store. They plan what they will observe, photograph, draw, who and what they will ask. They also think about how they will record their answers and findings in the quickest way (Umek et al., 2014, p. 82).

## 5. DISCUSSION WITH CONCLUSION

The research aimed to recognize to what extent tasks that promote lessons outside the classroom are represented in textbooks for the subject Environmental Studies. We chose to analyze textbooks because textbooks are the most frequently teaching material teachers select in Environmental Studies (Filipčič, 2016).

The results show that the environment for implementing tasks oriented towards operational-practical learning methods does not differ according to publisher and grade. In fact, in all three grades, the tasks are most often carried out in the classroom. In the Grade 1 textbooks, 90.91% of the tasks are of this type, in the Grade 2 textbooks 78.33% of the tasks are of this type and in the Grade 3 textbooks 68.94% of the tasks are of this type. In Grade 1, the tasks outside the classroom are most often carried out in nature (5.79%), while in Grades 2 and 3, the tasks outside the classroom are most often carried out in the pupil's home. In Grade 2, 13.22% of tasks are carried out in the pupil's home. In Grade 3, 9.85% of tasks are carried out in the pupil's home. This is confirmed by a study which found that teachers consider fieldwork to be the least represented in textbook sets (Hus and Čagran, 2008).

Research shows that out-of-classroom learning has a positive impact on students' cognitive, physical and emotional development by allowing them to learn learning objectives in a unique learning environment (Acar, 2014; Coates & Pimlott-Wilson, 2019; Cotič et al., 2020; Dhanapal & Lim, 2013; Djonko-Moore & Joseph, 2016). The knowledge students gain is more lasting (Mannion et al., 2013).

This research provided more detailed information on the tasks that lead to operational-practical learning methods in textbooks or workbooks for learning about the environment. This can help plan or integrate tasks in an area under-represented in textbooks or workbooks.

We conclude that there is still room for improvement and, consequently, for matching the tasks in the textbooks and workbooks to the guidelines of modern teaching. It would be worthwhile to analyze textbooks of other subjects as well, as this would give us an idea of the representation of operational-practical teaching methods in Slovenian textbooks.

## References

- [1] Acar, H. (2014). Learning Environments for Children in Outdoor Spaces. *Procedia - Social and Behavioral Sciences*, 141, 846-853. <https://doi.org/https://doi.org/10.1016/j.sbspro.2014.05.147>
- [2] Blažič, M., Ivanuš Grmek, M., Kramar, M. & Strmičnik, F. (2003). *Didaktika*. Visokošolsko središče, Inštitut za raziskovalno in razvojno delo.
- [3] Coates, J. K. & Pimlott-Wilson, H. (2019). Learning while playing: Children's Forest School experiences in the UK [Article]. *British Educational Research Journal*, 45(1), 21-40. <https://doi.org/10.1002/berj.3491>
- [4] Cotič, N., Plazar, J., Istenič Starčič, A. & Zuljan, D. (2020). The Effect Of Outdoor Lessons In Natural Sciences On Students' Knowledge, Through Tablets And Experiential Learning. *Journal of Baltic Science Education*, 19(5), 747-763. <https://doi.org/http://dx.doi.org/10.33225/jbse/20.19.747>
- [5] Dhanapal, S. & Lim, C. C. Y. (2013). A comparative study of the impacts and students' perceptions of indoor and outdoor learning in the science classroom [Article]. *Asia-Pacific Forum on Science Learning and Teaching*, 14(2), Article Article 2. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84926457594&partnerID=40&md5=e6c5fe7d8b17e4cd298ad424b8730b91>
- [6] Djonko-Moore, C. M. & Joseph, N. M. (2016). Out of the Classroom and Into the City. *SAGE Open*, 6(2), 215824401664964. <https://doi.org/10.1177/2158244016649648>
- [7] Filipičič, V. (2016). Učbeniški skladi, cene in kompleti učnih gradiv. *Vzgoja in izobraževanje*, 47(1), 33 – 46.
- [8] Grošelj, N., & Ribič, M. (2013). *Lili in Bine 2. Učbenik za spoznavanje okolja v drugem razredu osnovne šole*. Rokus Klett.
- [9] Grošelj, N., & Ribič, M. (2016). *Lili in Bine 3. Učbenik za spoznavanje okolja v tretjem razredu osnovne šole*. Rokus Klett.
- [10] Hergan, I., Devetak, I., Kolar, M. & Kovač, T. (2014). *Dotik okolja 3. Učbenik za spoznavanje okolja v tretjem razredu osnovne šole*. Mladinska knjiga.
- [11] Hergan, I., Kovač, T. & Rot Vrhovec, A. (2014). *Dotik okolja 1. Učbenik za spoznavanje okolja v prvem razredu osnovne šole*. Mladinska knjiga.
- [12] Hergan, I., Rot Vrhovec, A., Kovač, T. & Battelli, C. (2015). *Dotik okolja 2. Učbenik za spoznavanje okolja v drugem razredu osnovne šole*. Mladinska knjiga.
- [13] Hus, V. & Čagran, B. (2008). Didaktične značilnosti učbeniških kompletov za pouk spoznavanja okolja po oceni učiteljev. *Sodobna pedagogika*, 59 (152), 70–84.
- [14] Ivanuš Grmek, M., Čagran, B. Sadek, L. (2009). *Eksperimentalna študija primera pri pouku spoznavanja okolja*. Pedagoški inštitut.
- [15] Ivanuš Grmek, M., Mithans, M. & Jančič Hegediš, P. (2021). Kaj vpliva na učiteljevo izbiro učbenika? *Raziskovanje v vzgoji in izobraževanju: medsebojni vplivi raziskovanja in prakse*, 19–26.
- [16] Kolar, M., Krnel, D. & Velkavrh, A. (2011). *Učni načrt. Program osnovna šola. Spoznavanje okolja*. Zavod RS za šolstvo.
- [17] Krnel, D., Bajd, B., Pečar, M., Ferbar, J., Antič Gaber, M. & Grgičević, D. (2018). *Okolje in jaz 3. Spoznavanje okolja za 3. razred osnovne šole*. Modrijan.
- [18] Krnel, D., Pečar, M., Bajd, B., Ferbar, J., Antič Gaber, M. & Grgičević, D. (2016). *Okolje in jaz 2. Spoznavanje okolja za 2. razred osnovne šole*. Modrijan.
- [19] Krnel, D., Pečar, M., Bajd, B., Ferbar, J., Antič Gaber, M. & Grgičević, D. (2015). *Okolje in jaz 1. Spoznavanje okolja za 1.razred osnovne šole. 1. del*. Modrijan.
- [20] Krnel, D., Pečar, M., Bajd, B., Ferbar, J., Antič Gaber, M. & Grgičević, D. (2017). *Okolje in jaz 1. Spoznavanje okolja za 1. razred osnovne šole. 2. del*. Modrijan.
- [21] Mannion, G., Fenwick, A. Lynch, J. (2013). Place-responsive pedagogy: learning from teachers' experiences of excursions in nature. *Environmental Education Research*, 19(6), 792-809. <https://doi.org/10.1080/13504622.2012.749980>
- [22] Marentič Požarnik, B. (2019). *Psihologija učenja in pouka: od poučevanja k učenju*. DZS.
- [23] Rules on the validation of textbooks. (2015). *Uradni list RS, št. 34/15*. <http://www.pisrs.si/Pis.web/pregledPredpisa?id=PRAV12484>
- [24] Šefer, N. & Kumše, V. (2015). *Lili in Bine 1. Učbenik za spoznavanje okolja v prvem razredu osnovne šole*. Ljubljana: Rokus Klett.
- [25] Skribe Dimec, D., Umek, M., Vrščaj, D., Gostinčar Blagotinšek, A. & Čonč, V. (2012). *Raziskujem in razmišljam. Delovni učbenik za spoznavanje okolja v 1. razredu*. DZS.
- [26] Skribe Dimec, D., Umek, M., Vrščaj, D., Gostinčar Blagotinšek, A., Čonč, V. & Verbič Šalomon, T. (2013). *Raziskujem in razmišljam 2. Učbenik za spoznavanje okolja v 2. razredu osnovne šole*. DZS.
- [27] Umek, M., Gostinčar Blagotinšek, A., Čonč, V., Ličan Adamčič, Ž. & Galonja, T. (2014). *Raziskujem in razmišljam 3. Učbenik za spoznavanje okolja v 3. razredu osnovne šole*. DZS.
- [28] Valenčič Zuljan, M. Kalin, J. (2020). *Učne metode in razvoj učiteljeve metodične kompetence*. Pedagoška fakulteta. Zavod Republike Slovenije za šolstvo (2022). *Priporočila za izbiro učbenikov in kompletov učnih gradiv za šolsko leto 2022/2023*. Zavod Republike Slovenije za šolstvo. <https://www.zrss.si/wp-content/uploads/2022/03/2022-03-17-Priporocila-za-izbiro-ucbenikov-in-kompletov-ucnih-gradiv-za-solsko-leto.pdf>

# A Study on Primary and Middle School Students' Initiatives in Online Education, Wenshan City, Yunnan Province, China

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## Abstract

This study aims to analyze the key factors in implementing online courses in public primary schools in Wenshan City, Wenshan City, Yunnan Province. This study is an investigation and development. The data was collected through a questionnaire survey. The participants in this study were 200 teaching teachers from ten public primary schools in Wenshan City, Wenshan City, Yunnan Province. The overall alpha coefficient of Cronbach is 0.906, indicating high internal reliability. Analyze the data using statistical analysis of frequency, percentage, mean, and standard deviation and exploratory factor analysis methods. The research results indicate that Kaiser Meyer Olkin (KMO)'s sampling adequacy measure is 0.886, and Bartlett's sphericity chi-square test is 2674.454. These elements can be analyzed into four parts, with eigenvalues ranging from 1.781 to 7.083 for all aspects, a cumulative variance of 80.194%, and a statistical significance level of 0.00.

**Keywords:** online courses, primary schools, factor

## 1. INTRODUCTION

Online Education (OE) generally represents a kind of network-based learning behavior in the current concept and with high similarity to network training. On March 5th, 2017, Premier Li Keqiang mentioned "Online Education" in the government work report, pointing out that "expand information consumption such as digital home and Online Education." This is the first time OE has been written into the government work report. The report of the 18th Communist Party of China Central Committee proposed the description of attaching great importance to Online Education. OE takes an innovative form of educational organization to increase the driving force for promoting the balanced flow and adequate supply of educational resources.

With the progress of information globalization recently, the birth of the fifth-generation mobile communication technology has further improved the network infrastructure of man-machine and object interconnection. The Ministry of Education printed and distributed the outline of the 13th five-year plan for the national economy and promoted "Internet Plus education" (IPE). On February 27th, 2019, the general office of the Ministry of Education issued the critical points of education informatization in 2019, proposing to thoroughly implement the future education informatization plan, actively promote "Internet Plus Education," and support education modernization. We will continue to expand the excellent educational resources coverage, conduct the method of "one teacher, one excellent course, one teacher" in depth, and local education departments at all levels will organize primary and

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secondary school teachers to perform online teaching and to use excellent courses. The introduction of the above documents has released a positive signal for the development and improvement of OE in China. Many market players have entered the OE field, and the OE industry has begun to progress rapidly.

In February 2019, some hospitals in Wuhan found many unexplained pneumonia cases with a history of exposure, which belongs to a kind of acute respiratory infectious disease associated with a novel coronavirus infection. On February 12th, 2020, the general office of the Ministry of Education issued a notice on the "suspension without suspension" during the extended opening of primary and secondary schools. It is reported that to support all localities to do an excellent job in the work of "suspension without suspension" and help students to study at home, the Ministry of Education has integrated high-quality teaching resources in all aspects and opened the air classroom of China Education Television to provide support and convenience for students' online learning. On March 11th, 2020, Tan Desai proposed that the epidemic's severity was profoundly worrying, "therefore, we assessed that COVID-19 has pandemic features". He said: "There exists no pandemic with a reason of coronavirus before."

According to the ranking of GDP cities in Yunnan Province of China from 2019 to 2020, Wenshan City ranks ninth in Yunnan and 215 in China. Wenshan City is an advantageous area of agricultural products with Chinese characteristics, with a GDP of about 108.16 billion yuan and a permanent resident population of 2.672 million in 2019. In 2019, Wenshan City received a subsidy of 55.5979 million yuan for exemption from tuition and miscellaneous expenses; up to 158700 primary and secondary school students enjoy national free textbooks, and 33625 primary and secondary school students receive boarding subsidies. Wenshan City of Yunnan Province is vigorously developing Education.

On April 10th, 2020, the People's Government of Wenshan City issued "Wenshan City makes every effort to promote" Internet Plus Education "to build a smart campus." The Party Committee and Government of Wenshan City attach great importance to constructing educational information. The city's educational informatization level has been dramatically improved, and the software and hardware have been gradually improved, which has built a good platform for the smooth implementation of "Internet Plus Education." The city's "Internet Plus Education" has achieved rapid development. For "Internet Plus Education," the first is to strengthen significant hardware investment, the second is to enhance teacher training, the third is to promote pilot construction, and the fourth is to optimize the quality of running schools.

## **2. RESEARCH OBJECTIVE**

The main objective of this paper is to analyze the factors of primary and middle school students' efforts in Online Education: a teacher's perspective, Wenshan City, Yunnan Province, China.

## **3. LITERATURE REVIEW**

The outbreak of COVID-19 has enabled global education to "stop classes without stopping schools," which has brought opportunities to "Internet Plus Education." The practice materials of Internet Plus Education have a considerable growth trend. Nowadays, Internet Plus Education is a safe teaching method we must choose during the epidemic. However, there needs to be more practice of Internet Plus Education because the previous network technology can not guarantee excellent video transportation. Hence, people maintain a skeptical attitude toward the new teaching methods.

China has never used the teaching method of "Online Education" in national primary schools. Primary school to teach in the school classroom has always been the only choice. Due to primary school students' weak autonomous learning ability, people doubt whether "Internet Plus Education" in primary schools can replace traditional teaching methods. In the information age, studying independently is very important for every student. Of course, with the deepening of teaching reform, we should continue to explore and forge ahead on the road of autonomous learning, mobilize students' enthusiasm to the greatest extent, stimulate students' cognitive interest, develop each student's potential, meet the cognitive requirement of different students, promote the development of students' intelligence and thinking, and simultaneously improve students' acquisition of knowledge and ability, Help learners move to a higher level.

Feng Liu and Tiefang Liu highlighted the importance of Arousing Learners' interests. Teachers should focus on cultivating students' interests in the new teaching methods. Under Internet Plus Education, learners should adapt to the new environment and teaching methods. Teachers can appropriately improve teaching methods, stimulate students' senses, analyze and synthesize ideas, and produce apperception groups. Under the correct teaching



organization, let students correctly reproduce all kinds of images formed before and naturally cause some imagination. The selection time of simple, prompt, analytical, and comprehensive teaching can be summarized by students' reflections, classroom questions, and after-school homework. (FengLiu&Tiefang Liu, 2020)

Laiying Zhang, Wu Weitai Wu, Li Haiyan, and Guo Tang proposed a new teaching method for a "Double-Teacher Online Class." In the "Double-Teacher Online Class," one teacher mainly provides teaching guidance through video and audio, while others can type and discuss anytime. It integrates the advantages of traditional classroom "Double Teacher" (lecturer+teaching assistant), seminar classes, and after-school tutoring, making it easy for teachers to keep track of students' listening situations and solve their problems promptly, allowing students to fully integrate into the classroom and effectively solving the problem of low classroom efficiency. In the traditional classroom teaching mode, the principal lecturer needs help considering students' learning experiences, and teaching guidance and discussion are relatively separate. Most of the time, students need to spend their energy previewing and reviewing to truly understand and comprehend the knowledge, which can easily cause students to lose learning motivation. (Laiying Zhang, Weitai Wu, Li Haiyan, and Guo Tang, 2020)

Tasks and Functions of Internet Plus Education: The emergence of IPE breeds a brand new form of education. Although any new technology will not directly lead to the demise of schools, future schools may be very different from today's schools, and innovation will become the only reason for the existence of schools. Therefore, we need to rethink education, focus on the unique advantages of information technology in educational resource allocation, use Internet thinking to transform schools, expand the adequate supply of educational services, and provide more suitable high-quality education for every student. With the rise of computer technology, cloud computing, and various intelligent technologies, the views of "technology will fully cover the entire educational field" and "schools will eventually disappear" have gradually become popular. Compulsory education is targeted and purposeful education for children and adolescents by the state without charging fees. It is an essential means to improve the country's overall strength, and more importantly, it is also a fundamental way to achieve social equity. In many countries, receiving compulsory education is the fundamental right of school-age children and adolescents, and implementing mandatory schooling is an important national policy that has become the consensus of humanity. The change of educational form needs the certification of practice. The school continues to this day with the success of reform again and again. This paper aims at the observation of teenagers under China's compulsory education. It is an opportunity for the college to make reforms and practice under the context of present society to find the most suitable teaching mode and influencing factors under the change of educational form. The biggest goal of IPE is to break geographical restrictions and share educational resources to promote teaching efficiency.

#### 4. RESEARCH METHODOLOGY

This study analyzes the key factors of online teaching by public primary school teachers in Wenshan City, Wenshan City, Yunnan Province. The method of conducting this survey and developing research can be described as follows.

##### 4.1. How to choose the research area and data provider:

The research population comprises teaching teachers from ten public primary schools in Wenshan City, Wenshan City, Yunnan Province. Ten public primary schools used a quota sampling method to design questionnaires in this study. Meanwhile, to improve the reliability and stability of the questionnaire, researchers selected 20 people from each of the ten public primary schools as a sample and distributed 200 formal questionnaires. The design of this questionnaire is all single-choice questions, mainly using Likert's five-level scale answer mode. All questions on the scale are scored in a positive direction, with a score range of 5-1, as the basis for ensuring statistical analysis. The design of this questionnaire is all single-choice questions, mainly using Likert's five-level scale answer mode. All questions on the scale are scored in a positive direction, with a score range of 5-1, as the basis for ensuring statistical analysis. The representative range for each score is 5=strongly agree, 4=agree, 3=neutral, 2=disagree, and 1=strongly disagree.

##### 4.2. How to conduct reliability analysis:

George and Mallerx (2010) explained the values of the coefficient Cronbach's Alpha as:  $\geq 0.9$ =excellent,  $\geq 0.8$ =good,  $\geq 0.7$ =acceptable,  $\geq 0.6$ =problematic,  $\geq 0.5$ =poor,  $\leq 0.5$ =unacceptable. Therefore, for the research

questionnaire to be reliable, the coefficient Cronbach's Alpha must have a value of at least 0.7. This data analysis consists of 200 participants. According to Cronbach's (2003) reliability analysis, the overall Alpha coefficient of Cronbach is 0.906, indicating high internal reliability. In addition, the employee expectation factor is 0.859, concern motivation is 0.910, respect motivation is 0.842, trust motivation is 0.766, communication motivation is 0.781, tolerance motivation is 0.763, and praise motivation is 0.895. All scale measurements in the questionnaire have an acceptable level of reliability.

#### 4.3. How to Collect Data:

1. The primary data was obtained through online questionnaires and self-filled questionnaires, which were distributed to teaching teachers in ten public primary schools in Wenshan City, Wenshan City, Yunnan Province, China. Based on potential respondents, 200 appropriate samples were collected using the quota sampling method.

2. To complete this study, Secondary data comes from relevant literature or research papers, such as textbooks, papers, independent studies, and academic papers.

#### 4.4. Data Analysis:

After collecting and organizing data, researchers examine, filter, and encode the data for further research. Firstly, the data analysis used the reliability analysis method Cronbach's alpha to demonstrate consistency within the project. Secondly, data analysis uses statistical analysis techniques from social science statistical computer software to analyze the data's frequency distribution, percentage, mean, and standard deviation. Finally, exploratory factor analysis (EFA) was used to group the initial items in the data analysis and prepare highly correlated variables together. Exploratory factor analysis is mainly conducted on the detailed answers of observable variables by extracting principal components. The dimensions of different component quantities were fitted and compared, and the rotational factor load was clearly explained.

## 5. RESEARCH RESULTS

Demographic information of respondents: For gender, the ratio of "Female" is 89.00%. More than 40% of respondents in Age are "41 - 50 years old", and 34.50% are 22 - 30 years old. Working time in the education industry: more than 40% of respondents work for 26-30 years. From the perspective of Acceptance of Education, more than 80% of the respondents are "Bachelor's Degree." The proportion of "Chinese" in the subjects taught is 62.50%, and the ratio of Math interviewees is 37.50%. In terms of monthly income, the proportion of most of them in "\$1074-1145" is 40.00%.

Analysis of the element factors: Factor analysis is used to evaluate the variability between observed related variables and to determine whether there are precise dimensions that can be used to predict covariates in regression. The principal component analysis adopts the orthogonal rotation method. KMO values range from 0.00 to 1.00 and can be calculated for the total correlation matrix and each measurement variable. Values less than 0.50 are usually unacceptable (Hair et al., 2010). When determining the analysis results of the study variables, Bartlett's spherical test was used to test the overall significance of the correlation between variables ( $p < 0.05$ ), and the Kaiser Meyer Olkin test was used to test the relationship between 18 variables. Bartlett's sphericity test results for all variables were  $\chi^2 = 2674.454$ ,  $df = 153$ , and  $P\text{-value} = 0.000$  ( $P < 0.05$ ), indicating a significant correlation between the variables in the data. The Kaiser Meyer Olkin (KMO) test result for all variables was  $KMO = 0.886$ . According to Vanichbuncha (2011) and Kaiser&Rice (1974), this data is known to be suitable for factor analysis.

Table 1. Total Variance Explained

	Component Matrix				Communalities
	1	2	3	4	
1. The Government has introduced a series of relevant policies to promote the development of "Internet Plus Education."	0.223	0.122	0.819	0.116	0.749
2. The Government widely promotes "Internet Plus education."	0.166	0.22	0.833	0.11	0.782
3. Government standards and specifications "Internet Plus Education."	0.152	0.256	0.793	0.134	0.736
4. The Government policy explains the necessity of "Internet Plus education."	0.151	0.236	0.886	0.018	0.865
5. Schools play an essential role in the education and teaching of "Internet Plus Education."	0.155	0.822	0.151	0.104	0.733
6. Unified teaching platform software of the School "Internet Plus Education."	0.155	0.795	0.219	0.056	0.708
7. The School formulates the teaching mode of "Internet Plus Education."	0.161	0.906	0.194	0.021	0.884
8. The School can analyze "Internet Plus education," solve problems, and give good adjustment plans.	0.124	0.804	0.092	0.130	0.687
9. The School carries out training related to "Internet Plus Education."	0.120	0.814	0.230	0.046	0.732
10. Teachers should take classroom teaching quality as the central task of "Internet Plus education."	0.839	0.134	0.167	0.103	0.76
11. Teachers should maintain a positive attitude to promote "Internet Plus education."	0.805	0.116	0.191	0.176	0.726
12. Teachers should be able to pay attention to students' emotions under "Internet Plus education."	0.791	0.174	0.074	0.064	0.665
13. Teachers should treat every student equally under the "Internet Plus Education."	0.817	0.173	0.103	0.042	0.710
14. Teachers quickly master the relevant technologies of "Internet Plus education."	0.837	0.082	0.105	0.039	0.720
15. Teachers can answer the importance of "Internet Plus education."	0.902	0.115	0.201	0.010	0.868
16. Parents can raise teaching questions about "Internet Plus education."	0.071	0.065	0.089	0.931	0.883
17. Parents actively cooperate with the School to promote "Internet Plus education."	0.039	0.117	0.130	0.894	0.831
18. Parents can accompany students to participate in "Internet Plus Education."	0.177	0.091	0.085	0.87	0.804
Total	7.083	2.741	2.241	1.781	
% of Variance	39.35	15.23	12.45	9.89	
Cumulative %	39.35	54.58	67.02	76.92	
Total (Rotation Sums of Squared Loadings)	4.425	3.76	3.113	2.548	
% of Variance (Rotation Sums of Squared Loadings)	24.58	20.89	17.29	14.15	
Cumulative % (Rotation Sums of Squared Loadings)	24.58	45.47	62.76	76.92	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.886		
Bartlett's test			2674.454		
Df			153		
Sig.			0		

Note: If the numbers in the table are colored, blue means the coefficient is more significant than 0.4, and red represents the extracted common factor is less than 0.4.

By summarizing the conclusions of this study, the ways for teachers to participate in Internet Plus Education. The results show that the eigenvalues of four components are more significant than 1, and the eigenvalues of all elements are between 1.781 and 7.083, with a cumulative variance of 76.92%. The characteristic values are 7.083, 2.741, 2.241, and 1.781, respectively. Therefore, the results cannot be rejected, and the factor extraction is 4, accounting for 24.58%, 45.47%, 62.76%, and 76.92% of the variance. Then, use the maximum factor load of each variable to determine which component it belongs to. To confirm the practical significance of variable classification, the factor load must be greater than 0.60 (Hair et al., 2010). According to this standard, factor analysis found that element 1 (F1) and government factors are composed of four variables, with factor loads ranging from 0.793 to 0.886 and variance explaining 24.58% of the reasons in the data. Element 2 (F2), the school factor is composed of 5 variables, with component weights ranging from 0.795 to 0.906, and variance explains 20.89% of the reasons in the data. Element 3 (F3), the teacher factor comprises six variables, with component weights ranging from 0.791 to 0.902,

and variance explains 17.29% of the reasons in the data. Element 4 (F4), the parent factor, comprises three variables, with component weights ranging from 0.87 to 0.931. The variance explains 14.15% of the reason in the data.

## 6. CONCLUSION AND DISCUSSION

### 6.1. Conclusion

The researchers can conclude as follow:

According to the survey, national policies are the main influencing factors. The support of national policies can promote the progress of "IPE" for teachers and affect the attention of schools and parents. Due to the severe problems in China's education, teachers, schools, and parents are mainly concerned about students' achievements, so they are not optimistic about the progress of "IPE." The goal of the students is to get better grades and enter the university, thus questioning the new teaching methods. In this particular period, the development of "IPE" has to be carried out, so society does not pay much attention to the "IPE" progress. Compared with conventional teaching methods, "Internet Plus education" focuses more on resource equality. Although educational resources are constantly being improved, the proportion of help is always one-sided. The educational resources of large cities are better than those of small cities, and those of small cities are better than those of towns and mountains. For the imperfect coverage of network information technology, developing "IPE" is even more difficult. Once separated from the particular period, "Internet Plus education" will be challenging to create.

1. Teachers' views on adding "Internet Plus education" to the curriculum: According to research and survey, teachers believe that Online Education knowledge can be added to each course, but as mentioned above, due to imperfect education, Online Education knowledge is less. Whether science courses (physics, biology, chemistry) or liberal arts courses (politics, history, geography), teachers can integrate Online Education knowledge into the curriculum. More Online Education knowledge is integrated into the central systems (Chinese, mathematics, and English). When teachers integrate Online Education knowledge, students' receptivity is low. Students only want to get good grades to remember their abilities and test points. However, teachers will not focus on investigating students under the curriculum to absorb students' Online Education knowledge. This also led to the slow development of Online Education.

According to research and survey, teachers believe "Internet Plus education" is easy to combine with traditional teaching subjects (Chinese, mathematics, English). At the same time, music and art courses can also be integrated with "Internet Plus education." However, the physical education curriculum is not open to the public. The main reason is that the physical education curriculum needs sports, and "Internet Plus Education" tries to teach in a small space. When the teacher "Internet Plus education" imparts knowledge, students have no resistance to electronic products, pupils' self-control is worse, and their attention is easily distracted.

2. Schools and Governments should emphasize developing "Internet Plus Education." According to the research, the school campus equipment in Wenshan needs to be improved. The school's electronic equipment is outdated, so it is only required that each classroom be equipped with multimedia for video projection and PPT teaching. In addition, the network cable speed of the school could be better, and it takes a long time to load the website interface.

The Government could have improved the 5G network information technology coverage opening. Most urban areas are covered by 4G network information technology. In addition, some suburban areas can only reach 3G network information technology coverage. Therefore, the development of "IPE" is more complicated. Therefore, schools and the Government should focus on "Internet Plus education" and cannot ignore "Internet Plus education" because of the incomplete coverage of network information technology.

3 "Internet Plus Education" is necessary for a particular period. Traditional teaching methods have been used in Chinese education for a long time. Parents, teachers, and schools all believe that traditional teaching methods are better than "Internet Plus education." Therefore, once the epidemic and other particular environments disappear, most learners are more inclined to choose traditional teaching methods. Even though they know that "Internet Plus education" can make educational resources more equal, they will not risk creating an innovative change. Because examination-oriented education in China requires scores, learners are unwilling to reform themselves as experimenters.

The root of education is the richness and maturity of thinking, which leads to the most rational self and the most correct thinking cognition. Bernard Shaw has a wise saying: "When two people each have an apple, if they exchange, they still have an apple; but when two people exchange ideas, they may collide with more ideas." It can be seen from this that the core idea of "Internet Plus Education" is to realize the collision of ideas through the use of

the network. Teachers teach through the web, then communicate and interact with students, and then share information so that they can collide with the spark of wisdom, and offline activities become the supplement and expansion of OE. Therefore, schools should understand the necessity of "Internet Plus education."

By summarizing the conclusions of this study, the ways for teachers to participate in Internet Plus Education are as follows:

1. Publicize the importance of "Internet Plus education," inform parents at the parents' meeting that they should treat the new teaching model rationally, and find out the importance of students in other aspects.
2. Pay attention to students' emotions in class, speculate on students' overall psychological changes, and summarize after class.
3. Regularly communicate with the school on how to integrate into the curriculum "Internet Plus," find problems and make corresponding countermeasures.
4. Due to economic issues in primary schools, dual-teacher online classes can cause too much pressure on schools and can be transformed into a model of "one teacher, one parent online classes." Parents are classroom discipline supervisors in online classes, maintaining classroom discipline to improve classroom quality.

## 6.2. Discussion

Government: According to the situation of "Internet Plus education" in primary schools in Wenshan City, Yunnan Province, the Government responded to the national policy to promote the development of "Internet Plus education," and the public's attitude to "Internet Plus education" has gradually improved.

According to Huixin Sun&Shumei Jin's(2020) research, from the beginning of the epidemic to April 10, 2020, the Ministry of Education organized 37 online courses and technology platforms to be the first to open for free to universities nationwide, providing 41000 various online courses.

Schools: 100% of the schools have carried out the teaching method of "Internet Plus Education." However, the school's "Internet Plus Education" management is flawed in three aspects:

1. The school's electronic equipment must be updated due to limited funding.
2. The "Internet Plus Education" training in schools is insufficient; some schools do not even train.
3. Online courses have yet to launch physical education courses, as physical education courses require ample space for activities. Chinese, mathematics, English, music, and art are more easily combined with "Internet Plus education."

According to Xinxing Zhang's(2020) research, this nationwide comprehensive online teaching program, including universities, middle schools, and primary schools, has reached unprecedented coverage and the number of students involved. However, this is an unprepared battle, with hasty timing, incomplete hardware and software facilities, Insufficient psychological preparation, and an inability to adapt quickly. In online teaching, without students' attention and interaction, teachers must express classroom content more concisely and vividly to attract students' limited energy in the shortest possible time and convey the main teaching content to students. For students without the supervision of teachers, grasping the essence of teaching within adequate classroom time requires high self-confidence, compelling interest stimulation, and concise knowledge analysis from teachers.

Teachers: Teachers must actively respond to the "Internet plus Education" policy, skillfully use the network platform for teaching, and explore the most suitable teaching method for online courses.

According to Huguang Ping and Yali Du's (2016) research, Teachers should make the following changes in online classes: first, Focus on students and strengthen personalized guidance for learning. Under the general background of "Internet plus education," students may be at a loss when facing much knowledge. Therefore, it is necessary to strengthen personalized learning guidance for students, especially to use information technology to guide students to select command, improve students' information identification, filtering, and integration capabilities, and focus on cultivating students' ability to think independently, learn independently and cooperate in learning, to promote students' deepening and internalization of knowledge. Secondly, Pay attention to the infiltration of online moral and aesthetic education in teaching activities. Teachers should infiltrate moral education and aesthetic education into the teaching process of active interaction with students so that teachers and students can have positive exchanges and happy, successful experiences in networked teaching. They should also guide learners to improve their moral quality in the "Internet plus Education" environment.

Parents: Parents have a supportive attitude towards "Internet Plus education." Under particular circumstances, online classes can provide children with a safe learning environment; parents can understand the necessity of "Internet Plus education."

According to Ruiqin Wang's (2003) research, students overly rely on the Internet, reduce social interaction, and become increasingly isolated. Especially for teenagers, their physical and psychological development has yet to mature, and they cannot use the Internet in moderation, which can hurt their product. Therefore, schools and families should make appropriate use of online teaching.

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## References

- [1] Abou El-Seoud, M. Samir, et al. "E-learning and students' motivation: A research study on the effect of e-learning on higher education." *International Journal of Emerging Technologies in Learning (Online)* 9.4 (2014): 20.
- [2] Bao, W. (2020). COVID - 19 and online teaching in higher education: A case study of Peking University. *Human behavior and emerging technologies*, 2(2), 113-115.
- [3] Blackmon, S. J., & Major, C. (2012). STUDENT EXPERIENCES IN ONLINE COURSES A Qualitative Research Synthesis. *Quarterly Review of Distance Education*, 13(2).
- [4] Chengzhong Pei (2019) Research on Students' Autonomous Learning in the Context of "Internet Plus" *Gansu Education* (23), 114. doi: CNKI: SUN: GSJY.0.2019-23-103
- [5] Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of educational technology systems*, 49(1), 5-22.
- [6] Dingjun Chen&Haihu Song (2020) The challenge and opportunity of "Internet Plus education" to traditional education. *Scientific Consultation (Education and Research)* (08), 63-64 doi: CNKI: SUN: KXZK.0.2020-08-049
- [7] Feng Liu&Tiefang Liu (2020). Educational Exploration of Classical Teaching: The Significance and Practical Path of Classical Teaching from Herbart's Perspective. *Global Education Outlook* (07), 35-45. doi: CNKI: SUN: WGJN. 0.2020-07-003
- [8] Huguang Ping&Yali Du (2016) "Internet Plus Education": Opportunities, Challenges and Countermeasures. *Modern Education Management* (01), 13-18. doi: 10.16697/j.cnki.xdjygl2016-01.003
- [9] Huixin Sun and Shumei Jin (2020) Traditional culture education in colleges and universities in the context of "Internet Plus": opportunities, challenges, and implementation paths. *Modern Education Management* (08), 36-42. doi:10.16697/j.1674-5485.2020.08.006
- [10] Jing Xu (2004). Ancient Chinese schools and education system *Chinese Self Study* (01), 49. doi: CNKI: SUN: ZWZI. 0.2004-01-053
- [11] Jinsong Liu, Hanzhi Wang, Yu Wang, Guangxing Shi&Mengqi Wang (2021) Practice and Exploration of 5G+Smart Education in Primary and Secondary Schools - Taking Bao'an Middle School (Group) Experimental School as an Example *Information. Technology Education in China* (21), 68-70 Doi: CNKI: SUN: NETT.0.2021-21-027
- [12] Kentnor, H. E. (2015). Distance education and the evolution of online learning in the United States. *Curriculum and teaching dialogue*, 17(1), 21-34.
- [13] Laiying Zhang, Weitai Wu, Haiyan Li&Guo Tang (2020) The "Double Teacher Online Course" promotes precise teaching guidance and discussion - taking DingTalk Online Course as an example. *College Chemistry* (05), 33-37
- [14] Li Liu (2015). Investigation and Research on the Adaptation Ability of College Students to Autonomous Learning in the E-learning Environment. *Journal of Shenyang Institute of Engineering (Social Science Edition)* (03), 382-386 Doi: 10.13888/j.cnki. Jsie (ss). 2015.03.021
- [15] Lina Wu&Xiaosong Qin (2020). Application of student-centered education concept in the online teaching of autoimmune diseases. *Medicine Basic Sciences Education* (07), 506-509. doi:10.13754/j.issn2095-1450.2020.07.13
- [16] Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during the lockdown period of the COVID-19 pandemic. *International journal of educational research open*, 1, 100012.
- [17] Ningning Xu (2020). Educational Reform in the Perspective of Artificial Intelligence. *Technology Perspective* (23), 11-13. doi: 10.19694/j.cnki.issn2095-2457.2020.23.005
- [18] Ruiqin Wang (2003). Discussion on Online Education. *Journal of Shanxi Youth Management Cadre College* (02), 55-56 Doi: CNKI: SUN: SQGL.0.2003-02-017
- [19] Runping Niu&Hao Li (2020). Reflections and explorations on online education for college students during the "pandemic" period *International. Public Relations* (08), 135-136. doi: 10.16645/j.cnki.cn11-5281/c.2020.08.065
- [20] Sun, A., & Chen, X. (2016). Online education and its effective practice: A research review. *Journal of Information Technology Education*, 15.
- [21] Xiaofeng Zhang (2002). Reform of traditional education evaluation - education evaluation based on Theory of multiple intelligences. *Educational Science Research* (04), 28-30. doi: CNKI: SUN: JYKY.0.2002-04-011
- [22] Xibin Han "5G+Smart Education" Helps Innovate Teaching Models. *China Informatization Weekly* 2021-15020, Industry Application

- [23] Xinxing Zhan (2020). Analysis of the development of online education in universities during the post-pandemic period. *Technology Perspective* (23), 1-3. doi: 10.19694/j.cnki.issn2095-2457.2020.23.001
- [24] Yuju Lei, Zongkui Zhou&Yuan Tian (2017). The impact of learners' motivational beliefs on learning engagement in an online learning environment. *China's Audiovisual Education* (02), 82-8

# The Prominence of Language in Cross-cultural Understanding and Communication

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## Abstract

People learn the language, speaking rules and listening norms of the culture in which they were born and raised, starting from their early childhood, and these determine their communication styles. Almost every culture and subculture has its own different communication rules and norms. The language in which people express themselves and communicate with others has a significant impact on the way they think and behave. Therefore, language is of great importance in Cross-cultural Understanding and Communication. Misunderstandings in verbal and nonverbal communication between people from different cultures are common. People often misinterpret the words and actions of people from other cultures. A key reason for this is that cross-cultural communication relies heavily on stereotypical impressions of grouping people. These are overgeneralizations that are often inaccurate and do not suit the other person. As a result, it creates a significant obstacle to intercultural communication and understanding. In the study, the prominence of language in cross-cultural understanding and communication was examined.

**Keywords:** Cross-cultural understanding, Language education, Education management, Life-long learning

## 1. INTRODUCTION

Learning a language cannot be separated from learning how language is used in everyday life, especially how the language is influenced and also shapes the culture of its native speakers. This implies that a person who learns a particular language without understanding its culture is potentially a “fluent fool” (Bennet, Bennet & Allen, 2003).

In today's language learning the ability to speak fluently like a native speaker is no longer the most important thing. Understanding of the culture of the language being studied has proven to play an important role in determining the success of conveying messages and establishing smooth communication between the speaker and the interlocutor. Efforts to develop "Intercultural Competence" are often heralded as the ideal thing to achieve in language learning, especially a second or foreign language.

Talking about cross-cultural understanding means that we also have to talk about cultural understanding first. Based on the opinion of Levine (1993), the notion of culture is: "a shared national, ethnic, religious background from a common language and communication style, customs, beliefs, attitudes, and values". Cultural studies has always been an expansive discourse that responds to changing political and historical conditions and is always marked by debate, disagreement and intervention. For example, in the late 1970s, when class centrality in cultural studies was first confused by feminism's assertion of the importance of gender equality.

So culture is not only about music, art, food, style of dress, and certain writings. Culture can be something that is informal, abstract, and part of the interactions, expressions, and points of view of people who come from the same culture. In this respect, culture can be very complex and universal. More detailed explanations can be read in subsequent chapters with various topics and different themes.

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By analogy, culture can be likened to an iceberg where there are parts that are visible above the sea surface and there are parts that are hidden under the sea surface. Like an iceberg, the results of this external influence on culture cannot be seen or in other words are not easy to interpret. It is precisely these hidden parts of culture that play the most role in determining a person's attitude and character in his interactions with other people. Abstract things such as ways of communicating, ways of thinking, beliefs, attitudes, character, values, and one's point of view are examples of the hidden part of an iceberg. We will not know someone's character or way of thinking just by looking at their outer appearance. To explore these abstract things, we must first get to know and continue to interact with that person. Even if we have known someone for a long time, we may not fully know the character of that person. It could be that in certain matters we can correctly judge someone, but in other matters we may be able to judge wrongly. Because of the difficulty of recognizing this, these abstract things are called like the deepest part of an iceberg that is not visible at sea level.

## 2. CULTURE

The word culture may be a word that is often heard and easy to say, but difficult to define. When culture is defined, what emerges is a diversity of meanings based on certain perspectives, from sociology, anthropology, to linguistics. So don't be surprised if the word culture becomes one of the words that is difficult to define, which according to Barker (2008) is considered to have no "correct and definitive" meaning.

One definition of culture that is often used as a reference is the definition put forward by Mathew Arnold. Arnold (1868, quoted in Kuper, 1999; Lo Bianco, 2003) defines culture as the best thing that has ever been "said and known." The definition of culture expressed by Arnold implies a separation between "high culture" from "low culture", or, in simple terms, the separation of "high culture" from "mass culture or popular culture." In a more extreme view, Arnold's definition of culture contrasts "civilized" from "barbaric". In this view, culture is considered as something of high value, often reflected in the form of certain works of art and literature. In the context of teaching language and literature, what are known as "literary canons" emerge.

Another definition of culture was also put forward by an anthropologist E.B. Tylor. Tylor (1871, quoted from L. White (Kuper, 1999; Munch, Richard and Smelser, 1992) argues that:

*culture, or civilization, is that complex entity which includes knowledge, beliefs, arts, morals, laws, customs, and any other capabilities and habits acquired by man as a member of society.* (adapted from Kuper, 1999)

The concept of culture proposed by Tylor seems like a list containing unrelated elements. However, this definition survived and remained popular until the early 20th century.

Williams (1958, quoted from Jones, 2004) provides another view of culture. Culture is considered as something "ordinary", which is constructed from three important things, namely: (1) the meanings formed by ordinary people, (2) the experiences experienced by the participants, and (3) the texts created and the practices undertaken. as long as they live. The "ordinary" nature of the cultural concept formulated by Williams is in contrast to what Arnold previously stated. Viewing culture through Williams' lens means seeing human routines as an important part of culture. The routines followed by a particular society can say a lot about its culture. Culture, in this view, is manifested in many ways that are often taken for granted or considered unimportant.

One definition of culture that is able to summarize the definition that has developed is that stated by Moran (2006). Culture, according to him, is a changing way of life of a group of people, consisting of a set of practices related to a set of products, which are based on a set of perspectives, and occur in a particular social context. This definition sees culture as formed from five interrelated dimensions, namely: products, practices, perspectives, society, and individuals. These five dimensions, according to Moran (2006) are embodied in a model: some are visible and some are hidden, like an iceberg in the sea, the upper part of which is clearly visible while the lower part is submerged in water. This definition also implies that culture is dynamic, related to the past but continues to move forward and change. The dynamics of this culture is closely related to human nature which actively changes products, practices and the society in which the culture exists.

## 3. UNDERSTANDING CULTURE AND CROSS-CULTURAL COMMUNICATION

Cross-cultural knowledge is very important for the basis of cross-cultural understanding. Without this cross-cultural appreciation will not occur. It refers to surface-level acquaintance with cultural characteristics, values, beliefs, and behaviors.

### ***Interculturality***

The function of the concept of interculturality, which is used to express the interaction between different cultures in the simplest sense, has come to the fore with the Task-Based Approach in foreign language teaching.

Demir and Üstün (2017) explains the concept of interculturality as “the situations where people from different cultures come face to face in daily life”. Communication of individuals with different cultural values enables them to interact in a cultural sense.

Today's world is being shaped by connections that result in the communication of an increasing number of people from different linguistic and cultural backgrounds. This communication emerges not only through business life, military cooperation, science, education, mass media, entertainment, tourism, but also through different connections such as immigration due to labor shortage or political deadlocks.

In all these connections there is a need for communication that should be as constructive as possible and free from misunderstandings and breaks.” emphasized the importance of intercultural communication.

Intercultural communication approach, as stated above, is an approach that every individual should have today for many reasons. This approach promotes the development of tolerance and positive attitudes between cultures and nations.

In his intercultural sensitivity development model, Bennett (1993) discussed the process of developing sensitivity and tolerance towards different cultures in two basic stages: ethnocentrism and ethnic relativism. The first stage is rejection, which is explained as the individual's alienation from different cultures or not accepting the different; It consists of the phase of defense, in which the individual compares himself with others and feels privileged, and the phase of contempt, in which the individual evaluates the differences of other cultures with his own codes and accepts them relatively.

Ethnic relativism, which is the second basic stage of Bennett's (1993) intercultural sensitivity development model, accepts that the individual's own cultural values are not the only and indispensable one and that values related to other cultures are started to be respected; It is the stage of integration, in which the individual begins to adapt to these cultures in interaction with different cultures, and the individual can evaluate the behaviors from different cultural perspectives.

The concepts of identity, prejudice, stereotype, discrimination, ethnocentrism and interculturalism are all concepts that have been adopted in foreign language teaching today and are aimed to raise consciousness and awareness in individuals for the acquisition of intercultural communication skills given in the goals and principles of the Task-Based Approach.

## **4. THE RELATIONSHIP BETWEEN CULTURE AND LANGUAGE**

The relationship between culture and language is very close because both of them mutually influence language speakers in communicating and interacting. Giosa (2009) explains that culture can be described as two sides of a coin, namely from the side of the humanities and social sciences. The humanities side refers to the condition of how social groups represent themselves and others in the process of producing materials, works of art, literature, social institutions, or artifacts of everyday life. Meanwhile, the social science side refers to behavior, attitudes and beliefs, ways of thinking, and behavior carried out by group members in their community. In this respect, the historian or social scientist appears to be the agent responsible for teaching culture. In fact, for certain fields, culture is also the responsibility of the language teacher to be taught to students because culture manifests itself through language. Learning a language without learning its culture seems inaccurate and incomplete. There is a special term put forward by Hirsch (1984) in relation to teaching culture, namely 'cultural literacy'. The term was invented when observing the lives of Americans who were formerly illiterate and lacked the ability to understand and participate fluently in one's own culture when communicating with one another. Of course, this had an impact on social life at that time, such as the loss of the meaning of communication that made American society fall. Therefore, Hirsch emphasizes that children must be introduced and taught to be culturally literate in the classroom as early as possible.

Children need to have background knowledge related to culture in learning languages in order to understand reading material and be able to get the right information. In this case, not all children have the opportunity to get reading and writing information outside of school. Therefore, the classroom plays an important role in providing valuable information that can be obtained from the teacher.

Cultural literacy is one of the important things that must be considered by teachers in the teaching and learning process in the classroom. However, in the context of learning a foreign language such as English, this point is a major problem that students may encounter. They cannot use English as the target language effectively and precisely in communicating because they do not have background knowledge about the culture of the target language. Therefore, the teacher's role is very important to introduce the culture in the target language to students so as not to cause misunderstandings or even pragmatic failures in communicating and interacting.

Language is often seen as a product of culture. On the other hand, the formation of culture cannot be separated from the dominant role of language. Fishman (quoted from Risager, 2006) formulates three close links between

language and culture by stating that language is a "part", "index", and "symbolic" of culture. As a "part" of culture, language plays an important role as a bridge in understanding culture, especially for those who want to learn a lot about that culture. As a cultural "index", language reveals a way of thinking or organizing experiences in a particular culture. As "symbolic" culture, language movements and conflicts utilize language as a symbol to mobilize the population to defend (or attack) and support (or reject) the cultures associated with it.

In looking at the relationship between language and culture, Kramersch (1998, quoted from Risager 2006) sees language in its function to express, display, and symbolize cultural reality. By using language, humans do not only articulate experiences, facts, ideas and events to one another, but also convey attitudes, beliefs and points of view. Language also displays cultural reality by helping humans create experiences. The experience becomes meaningful when language becomes the medium. Still according to Kramersch (1998), Kramersch (2004), Risager (2006), cultural experience is also symbolized by language. Language becomes a cultural symbol because, as a sign system, language contains cultural values. Humans are able to recognize and distinguish one another more or less through the process of observing the way they use language.

## 5. CONCLUSION

Teaching language along with understanding its culture has changed the paradigm of many professional language teachers today. This of course provides new challenges for language teachers, especially foreign language teachers, to be able to design and apply effective learning in the classroom. Careful consideration must be exercised when deciding what aspects of culture to teach, using what materials, through what linguistic inputs, and how to apply them in the classroom. The learning outcomes to be achieved must also be stated clearly and measurably.

Several issues regarding the definitions and basic concepts related to "intercultural competence" along with the basic principles of its implementation in the classroom have been briefly presented in this paper. There are many things that still need further discussion. This is due to the breadth of discussions about language and culture and how complex the interrelationships between the two are. Language, culture, and the way both are taught and practiced are constantly changing and evolving; this is what will continue to pose challenges for language teachers to always think, reflect and seek better solutions in teaching language and culture.

## References

- [1] Barker, C. (2008). *Cultural Studies: Theory and Practice*. Sage Publications, London
- [2] Bennett, J.M., M.J. Bennett and W. Allen, (2003). *Developing intercultural competence in the language classroom*. In D.L. Lange & R.M. Paige (Eds.) *Culture at the Core: Perspectives on culture in second language learning*. Greenwich, CN: Information Age Publishing
- [3] Bennett, M. J. (1993). *Towards ethnorelativism: A developmental model of intercultural sensitivity*. In R. M. Paige (Ed.), *Education for the intercultural experience*, 2, 21-71. Yarmouth, ME: Intercultural Press.
- [4] Demir, S., Üstün, E. (2017). Öğretmen Adaylarının, Kültürlerarası Duyarlılık ve Etnik Merkezilik Düzeylerinin İncelenmesi, *İnönü Üniversitesi Eğitim Fakültesi Dergisi* 18(3), 01-11. DOI: 10.17679/inuefd.354129
- [5] Giosa, V.D. (2009). The cultural management of leadership. *Anales de Estudios Economicos Empresariales*, 19, 167-191.
- [6] Hirsch, E. D. (1984). *Cultural literacy*. National Inst. of Education (ED), Washington, DC.
- [7] Josef Lo Bianco (2003). *Teaching Invisible Culture Classroom practice and theory*. Language Australia Ltd. Australia
- [8] Kramersch, C. (1998). *Language and Culture*. Oxford: OUP
- [9] Kramersch, C. (2004). *Language, thought and culture*. In *The Handbook of Applied Linguistics*, A.Davies & C. Elder (eds), 235–261. Oxford: Blackwell. DOI: 10.1002/9780470757000.ch9
- [10] Kuper, A. (1999). *Culture: The Anthropologists' Account*. Cambridge: Harvard University Press.
- [11] Levine, D. R. (1993). *Beyond Language Intercultural Communication for English as a Second Language*. Prentice Hall Regents, Englewood Cliffs.
- [12] Munch, Richard, and Neil J. Smelser (1992). *Theory of Culture*. Berkeley: University of California Press, c1992 1992. <http://ark.cdlib.org/ark:/13030/ft8q2nb667/>
- [13] White, L. (1970). *The Science of Culture; The Evolution of Culture*. Britannica, London
- [14] Moran, P. R. (2006). Teaching Culture: Perspectives in Practice. *TESOL Quarterly* Vol. 40, No. 4 (Dec., 2006)
- [15] Risager, K. (2006). *Language and Culture Pedagogy: From a National to a Transnational Paradigm*. Clevedon: Multilingual Matters

# Problems and Countermeasures of Classroom Management in Five-Year Colleges Taking Z Vocational and Technical College as an Example

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## Abstract

With the development of higher vocational education, five-year higher vocational education, as an important part of higher vocational education, is a special academic system combining secondary vocational education with higher vocational education, so there are some problems in curriculum management. In recent years, the state has placed great emphasis on higher vocational education, training outstanding talents, and repeatedly emphasized the mode of running a school by combining production with education and cooperation between schools and enterprises, which has promoted the curriculum management of higher vocational colleges to a certain extent and improved the quality of running a five-year higher vocational college. Through literature analysis, questionnaire survey, interview and statistical analysis, this paper analyzes the main problems in the five-year college department of Z Vocational and Technical College, and analyzes the reasons by five factors: school management, teachers, family, students' personal factors and social factors. In order to have a more scientific understanding of the five-year higher vocational education, it also hopes to enrich the research on the classroom management direction of the five-year higher vocational college and provide new management ideas for the five-year college department of Z Vocational and Technical College.

**Keywords:** Causes and Countermeasures of Classroom Management Problems in Five-year Higher Vocational Colleges

## 1. INTRODUCTION

### 1.1. Background of the Study

In recent years, the scale of China's vocational education has been expanding and developing vigorously. China's government has issued relevant policy reports, vigorously supporting the development of vocational education and supporting vocational education, which shows that the state attaches great importance to vocational education. In 1985, "Decision of the Central Committee of the Communist Party of China on the Reform of Education System" gradually established a system of mutual communication between vocational and technical education and general education. Since then, vocational education has been paid attention by various places, and vocational and technical schools have been set up one after another. In March 2002, the Ministry of Education issued "Several Opinions on Further Improving Five-year Higher Vocational and Technical Education" to further standardize the management of five-year higher vocational education, improve the quality of education and teaching, and promote the healthy development of five-year higher vocational education. Document No.16 of the Ministry of Education in 2006, "Several Opinions on Improving the Teaching Quality of Higher Vocational Education in an All-round Way", put forward the mission of "training high-skilled talents facing the needs of production, construction, service and management". The Third Plenary Session of the 18th CPC Central Committee pointed out to speed up the modern

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vocational education system, deepen the integration of production and education, school-enterprise cooperation, and cultivate high-quality skilled talents. In 2018, the Opinions of the CPC Central Committee and the State Council on Comprehensively Deepening the Reform of Teaching Staff Construction in the New Era proposed to comprehensively improve the quality of teachers in vocational colleges and build a high-quality "double-qualified" teaching staff. On May 1, 2022, the new vocational education law will be implemented, which consists of eight chapters and sixty-nine articles. It is clear that vocational education is an education type with the same important position as general education, and efforts should be made to enhance the recognition of vocational education, deepen the integration of production and education, and cooperation between schools and enterprises, improve the guarantee system and measures of vocational education, and better promote the high-quality development of vocational education.

With the development of social economy, the demand for talents in the market is increasing. Vocational education and training of skilled talents are the main force, so the teaching mode and teaching quality can not be ignored. On October 18th, 2017, Comrade Xi Jinping pointed out in the report of the 19th National Congress that it is necessary to deepen the integration of production and education. In recent years, five-year higher vocational colleges have cooperated with many enterprises to achieve a win-win mode of integration of production and education and cooperation between schools and enterprises. To some extent, it promotes the curriculum management of five-year higher vocational education, improves the teaching quality of five-year higher vocational education, and meets the needs of cultivating talents in the new era.

This paper studies the present situation of classroom management in a five-year higher vocational college, and by means of questionnaire and interview, finds out the problems of teachers' classroom management in the current five-year higher vocational college, and puts forward corresponding solutions to specific problems. It is conducive to improving the classroom management of five-year colleges and universities, thus promoting the improvement of teaching management level and teaching quality.

### *1.2. Problem Statement*

Based on the research of classroom management and countermeasures of five-year college, taking Z Vocational and Technical School as an example, this paper analyzes the problems of classroom management of teachers in five-year higher vocational colleges by means of investigation and interview, and puts forward some solutions to the actual problems. It is beneficial to improve the classroom management of five-year higher vocational colleges, improve the learning situation of five-year students, cultivate people with virtue and cultivate excellent technical talents for the society.

### *1.3. Research Objectives*

Effective classroom management is the guarantee of a good class, which will help to establish a good teaching atmosphere, realize students' learning and teachers' teaching. Both sides can communicate easily and happily, reduce the distance between hearts and improve teaching efficiency.

This paper takes the five-year college department of Z Vocational and Technical College as the research object, finds out the problems of classroom management in five-year college, and analyzes the causes of classroom management problems, mainly from the perspectives of school management, teachers, families, students and society. Finally, the countermeasures to solve the problem of five-year college department are put forward. Relevant departments should increase policy and economic support for five-year college, improve school software strength and hardware configuration, create a good family environment, improve students' mental health level, and strengthen students' education management.

### *1.4. Research Questions and Hypothesis*

Five-year higher vocational education has a special academic system, so some special problems in classroom management need special attention. The success or failure of classroom management can directly affect the realization of vocational education goals, the future development of students, and even the development of the industry. Taking Z Vocational and Technical School as an example, this paper analyzes the common problems of classroom management in five-year higher vocational colleges and puts forward some countermeasures, which will help improve classroom management in five-year higher vocational colleges, thus promoting the improvement of

teaching management level and teaching quality. Improve the learning situation of five-year students, cultivate people with virtue, and cultivate excellent technical talents for the society.

There are many papers in secondary vocational schools and higher vocational schools, but few in five-year vocational schools. Taking Z Vocational and Technical School as an example, this paper analyzes the management problems and countermeasures of five-year vocational schools, which will help improve the classroom management effect, improve students' learning state, improve students' self-control ability, help students' future development, and provide new ideas for educational administrators, thus improving the quality of five-year education.

### *1.5. Significance of the Study*

This paper takes the five-year college department of Z Vocational and Technical College as the research object, and finds out the main problems of classroom management in five-year college, which are mainly the irregular class order of students, many classroom behavior problems, unclear responsibilities of counselors and teachers, many problems in the internal and external environment of the classroom, psychological problems faced by students, confusion in the selection of teaching materials, and influence on the teaching effect. Analyze the causes of classroom management problems, mainly from the main problems existing in five-year colleges, from the perspectives of school management, teachers, families, students and society. Finally, the countermeasures to solve the problem of five-year college department are put forward. Relevant departments should increase policy and economic support for five-year college, improve school software strength and hardware configuration, create a good family environment, improve students' mental health level, and strengthen students' education management.

### *1.6. Scope of the Study*

#### (1) Literature analysis:

Literature analysis is a research method to explore the nature and status of the research by consulting, analyzing and sorting out the literature. This paper uses literature analysis, mainly referring to the relevant literature of classroom management in higher vocational colleges, to understand the current research situation of five-year classroom management in higher vocational colleges, and to compare it with empirical materials, to find out the breakthrough point of the research, and to make a literature review.

#### (2) Questionnaire survey:

Through questionnaire survey, we can learn about students' self-management, the characteristics of teachers' classroom management, students' expectation and evaluation of teachers' classroom teaching management, etc. The paper compiled a questionnaire and conducted a questionnaire survey on 200 subjects. Describe the current situation based on the survey results.

#### (3) Interview method:

At the same time, some students' parents were interviewed by questionnaires, so as to obtain first-hand information. The main purpose is to know how much teachers and administrators attach importance to classroom management and the research situation, as well as their understanding of the causes of the present situation. Lack of materials to assist the questionnaire survey.

#### (4) Statistical analysis:

Summarize the acquired data and information, make statistics, get the results of the survey data, and summarize the rules and conclusions, which can objectively describe the present situation of classroom management.

### *1.7. Operational Definition*

#### *1.7.1. Five-year College*

Five-year college is a five-year higher vocational and technical college, which is one of the forms of higher vocational and technical colleges in China. Compared with ordinary colleges and universities, five-year colleges and universities pay more attention to the cultivation of students' comprehensive quality and vocational skills, and cultivate students' independence and innovative consciousness and the spirit of not being afraid of hard work.

The "3+2" five-year college, also known as "junior high school starting point college education", recruits junior high school graduates and students who have not graduated from high school after taking the senior high school entrance examination. The first three years belong to technical secondary schools, and the second two years are incorporated into higher vocational education. After the completion of their studies, they will be awarded the

"Graduation Diploma of Higher Education" uniformly printed by the Ministry of Education, which is a full-time college degree recognized by the state. Five-year colleges and universities have the right of self-enrollment, and the students actually enrolled each year are the best among those who have failed the senior high school entrance examination. Five-year college students enjoy a state subsidy of 1,500 yuan in the first three years, that is, the tuition-free policy. In the second two years, college students pay tuition fees like ordinary colleges and universities. After graduating from college, you can also take the higher vocational college entrance examination and continue to study for a bachelor's degree.

### *1.7.2. Classroom Management*

In recent years, different scholars have their own views on the study of classroom management. Generally, classroom management refers to the process in which teachers coordinate various relationships in the classroom to establish an effective learning environment and promote students to actively participate in classroom activities, so as to achieve the predetermined teaching objectives.

Tian Huisheng believes that "classroom management is a process in which teachers can effectively achieve the predetermined teaching objectives by coordinating various teaching factors in the classroom".

Chen Shijian put forward, "Classroom management is the process of establishing a suitable classroom environment, maintaining classroom interaction and promoting classroom growth. Among them, establishing a suitable classroom environment is the basic premise of classroom management, maintaining classroom interaction is the measure of classroom management, and promoting classroom growth is the ultimate goal of classroom management".

Du Ping et al. defined classroom management as "the management carried out in the classroom teaching process, that is, the process in which teachers and students follow certain rules in classroom teaching, effectively deal with the factors that affect classroom teaching and their relationships, so as to make classroom teaching go smoothly, improve teaching efficiency, promote students' development and achieve teaching objectives".

The above scholars pay attention to the classroom process of classroom management, with the aim of achieving the teaching objectives. The author believes that classroom management is a process in which teachers and students jointly handle the appropriate people, things, things and other businesses in the teaching process, so as to achieve the teaching effect and achieve the teaching objectives.

## **2. LITERATURE REVIEW**

### *2.1. Introduction*

Five-year college is a form of vocational education. Many industrialized countries in the world have a long history of development, and vocational education has a long development time. Therefore, there are abundant researches on classroom management of vocational education abroad. After World War II, vocational education has gradually become higher, and secondary and primary vocational education in various countries can no longer meet the demand for talents. Therefore, higher vocational education in various developed countries has entered a period of rapid development. Foreign scholars have made more and more in-depth research on classroom management.

CBE model represented by the United States and Canada is ability-based education. The post needs are decomposed, the training objectives are defined, the teaching staff summarize, summarize and form the teaching modules according to the teaching rules, and the teaching syllabus is formulated, emphasizing that the training of professional ability is the core of the post group needs.

Germany implements "dual system" school-enterprise cooperation. One year to learn professional knowledge, one year to practice skills in off-campus enterprises, emphasizing ability and strong pertinence, has improved the enthusiasm of enterprises and cultivated high-quality German labor force.

Skinner's model, also known as the correction model, believes that in classroom management, teachers should first explain the classroom rules clearly and maintain a good classroom order. If students want to behave appropriately, they must strengthen rewards for appropriate behaviors and ignore students' bad behaviors.

Cantor's model, also known as decisive discipline model, emphasizes classroom management under behavior model, and manages subject discipline through effective classroom order. Under the condition of not hurting students' self-esteem, teachers should decisively discipline students who violate the rules.

The model of H.Ginott,1972), also known as the wise information model, emphasizes that teachers communicate with students in a wise way. In the classroom, teachers lead by example and gradually form discipline. Encourage more students, guide cooperation, and properly express anger.

## 2.2. Related Theories

### 2.2.1. Domestic Research Status

Search on CNKI found 707 five-year college journals, including 45 papers, 7 conferences, 14 newspapers, 8055 journals with classroom management as the theme, 1995 papers, 578 conferences and 16 newspapers. Search 67 academic journals, 2 dissertations, 2 conferences and 0 newspapers by classroom management in higher vocational colleges. Among them, Guo Peng, a researcher, analyzed the problems and causes of higher vocational students in class in *On Classroom Management Strategies of Higher Vocational Colleges*, and put forward corresponding management strategies, mainly from the perspective of students and teachers, and put forward corresponding strategies. Gu Fei and other scholars analyzed the classroom management in higher vocational colleges from the perspective of educational ecology, and analyzed the interaction among four influencing factors, such as teachers' management style, teaching level, classroom size and group motivation. It also puts forward the effective management strategies of ecological classroom in higher vocational colleges from six dimensions: strengthening the consciousness of ecological subject in classroom, optimizing the ecological environment in classroom, innovating the ecological classroom teaching mode, improving the organizational structure of ecological classroom, standardizing classroom order with group power, and building a mixed symbiotic ecological classroom. Shao Zhaoguo, a scholar, analyzed and studied the classroom management of five-year higher vocational colleges from the perspective of "supply-side reform" and the conversion of new and old kinetic energy, and put forward countermeasures for the classroom management of five-year higher vocational colleges, focusing on factors such as schools, teachers, families and society.

With the development of information technology, under the background of new media era, some scholars analyze the problems of students in the network era, including students' self-centeredness, flexible thinking, poor ideological and moral cultivation, low self-control ability and so on, which are all factors that affect students' high-quality classroom management. At the same time, under the background of new media, some teachers only mechanically complete their teaching plans in the classroom teaching process, and they do not make rational use of the new media classroom, which cannot provide rich teaching resources and has a single teaching method. Moreover, it doesn't take into account the discipline in class and whether students learn clearly, which leads to the organic unity of "teaching" and "learning", which can't arouse students' interest and enthusiasm in learning.

Some scholars put too much emphasis on the quality of teaching in their papers, but did not emphasize the importance of classroom management. Some papers pointed out the deficiencies of the current five-year higher vocational education in classroom management, the decline of teaching quality, the imperfect teaching evaluation system and feedback mechanism, and the aging of leadership and management concepts. Therefore, in order to improve the teaching quality, we must strengthen classroom management.

## 3. METHODOLOGY

### 3.1. Introduction

#### 3.1.1. Z Vocational and Technical College Overview

Z Vocational and Technical College was approved by the People's Government of Henan Province in April, 2001 and put on record by the Ministry of Education. S is the only municipal full-time public higher vocational college in the city. There are three existing campuses, with an area of 1,655 mu and a total construction area of 320,000 square meters.

At present, the school has 11 secondary teaching colleges and one affiliated hospital, with 52 full-time higher vocational majors, 12 five-year college majors and 32 secondary vocational majors. There are 10,356 students in school. Adhering to the school motto of "cultivating virtue and ability, aiming for lofty goals" and the educational philosophy of "everyone is a talent and everyone can become a talent", the school has developed into a higher vocational college integrating ordinary higher vocational education, secondary vocational education, adult education, distance open education and technical training.



3.2. Research Design

The five-year college department of Z Vocational and Technical College is a junior high school-based college education, offering courses such as preschool education, primary school Chinese education, computer application technology, architectural engineering, e-commerce and marketing. There are 2915 five-year students in the school. Accounting for 28.1% of the total number of students in the school. Through five years' systematic training, students are well versed in the courses of technical secondary schools and junior colleges, and pay attention to cultivating students' professional skills and comprehensive quality. Compared with traditional education, they have the advantages of early professional orientation, long professional study time, solid foundation and strong professional adaptability.

3.3. Population and Sampling

Summary Table of Enrolment Number of Five-year College Department of Z Vocational and Technical College.

Table 1. Summary Table of Enrolment Number

educational system	Class 2019			Class 2020			Class 2021			amount to
	man	Woman	add up to	man	Woman	add up to	man	woman	add up to	
Five-year system	516	431	854	424	379	803	624	634	1258	2915

Summary Table of Classes in Five-year College Department of Z Vocational and Technical College.

Table 2. Summary Table of Classes

specialized subject	study front teach rear			count Calculte machine should do use			money affair administer reason			electricity business sell sell			architectural engineering		
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Grade	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Number of classes	7	7	5	3	3	3	2	2	2	2	2	2	1	1	1
add up to	19			9			6			6			3		

specialized subject	architectural decoration			Automobile repair and inspection			mechanical and electrical equipment			Animal husbandry and veterinary			high-speed railway			Language education
Grade	20 19	20 20	20 21	20 19	20 20	20 21	20 19	20 20	20 21	20 19	20 20	20 21	20 19	20 20	20 21	20 21
Number of classes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
add up to	3			3			3			3			3			5

### 3.3.1. Respondents

This paper mainly studies the problems and countermeasures of classroom management in five-year colleges. By means of questionnaires and interviews, the administrators, teachers and students of five-year colleges in Z Vocational and Technical College were investigated, and the opinions and suggestions of school administrators, teachers and students were widely listened to, and the corresponding research was carried out in combination with their own classroom management practice.

In order to truly reflect the present situation of classroom management of teachers in the five-year college department of Z Vocational and Technical College, the research investigated 260 students, and the scores of questionnaires distributed were 260, and 242 were effectively recovered, with a recovery rate of 93.07%. A total of 16 unqualified questionnaires were rejected, and 226 valid questionnaires were adopted, accounting for 86.92% of the total. In order to further understand the implementation of classroom management in the five-year college department of Z Vocational and Technical College, a questionnaire survey was conducted among 30 teachers, and 30 questionnaires were distributed to each teacher respectively, and the validity and authenticity of the survey results were ensured through instant completion and anonymous way.

Through personal interview, we can learn more about the implementation process of the five-year junior college teaching in Z Vocational and Technical College, and take the form of e-mail or face-to-face interview. The interviewees are mainly school administrators and parents.

### 3.3.2. Questionnaire design

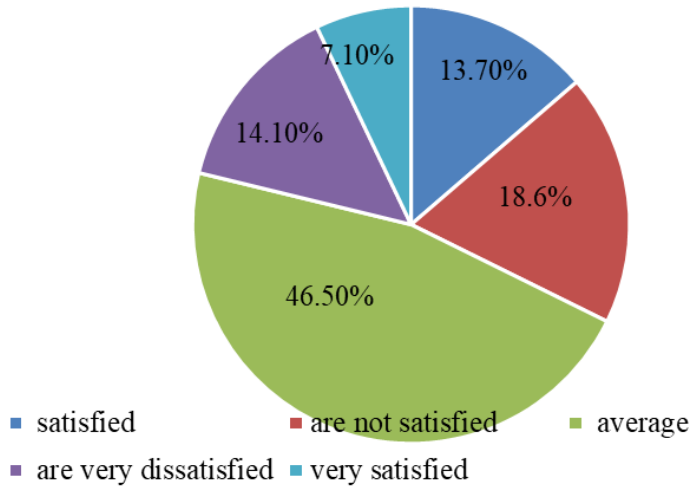
Open-ended questions are the respondents' opinions and suggestions on classroom management in the five-year college department of Z Vocational and Technical College, which are divided into student volume and teacher volume. The questionnaire consists of 20 questions (see Appendix 1), which mainly involve students' interpersonal relationship, family situation, learning motivation, development planning and classroom management satisfaction. There are 15 questions for teachers. (See Appendix 2) The questionnaire mainly includes students' learning status, the communication between parents and teachers, and the influencing factors of classroom management. The design of the questionnaire is strongly supported by school administrators, teachers and students, which makes the results of the survey have high research value and significance.

### 3.3.3. Analysis of survey results

The survey began on February 1st, 2022 and ended on March 5th, 2022. Through the survey, it was found that students' satisfaction with classroom management of five-year junior college in Z Vocational and Technical College was generally not high. Taking the students' satisfaction with classroom management in the five-year junior college of Z Vocational and Technical College as an example, it can be seen that only 7.1% of students are very satisfied with classroom management, 13.7% are satisfied, generally 46.5%, 18.6% are dissatisfied with the present situation of classroom management, and 14.1% are very dissatisfied with it. Although the survey data of other personnel are different in specific values, the distribution of satisfaction is almost the same. Therefore, it is urgent to solve the problem of classroom management in the five-year college department of Z Vocational and Technical College, and the relevant administrators of the five-year college department of Z Vocational and Technical College must begin to pay attention to the problem of student classroom management.

Table 3. Student satisfaction survey results

Student satisfaction survey results



Questionnaire on Classroom Management of Five-year College Department of Z Vocational and Technical College (student n=226)

Table 4. Questionnaire on Classroom Management

question	Option (select number of people/proportion)				
1.What is your gender?	A. Male 125/55.3	B. woman 101/44.7			
2. Are you from () family?	A. Towns 78/34.5	B. village 148/65.5			
3. Is it the only child?	A. Yes 44/18.6	B. No 184/81.4			
4. What grade are you in?	A. Grade One 43/19.0	B. Second grade 72/31.9	C.Freshmen 68/30.0	D. Sophomore 39/17.3	E. Third year (internship stage) 4/1.8
5. What is the monthly income of the family?	A. less than 2,000 yuan 46/20.4	B. 2000-5000 yuan 162/71.7	C. 5000-10000 yuan 10/4.4	D. More than 10,000 yuan 8/3.5	
6. Family atmosphere?	A. OK 38/16.8	B. Better 26/11.5	C. General 80/35.4	D. Poor 32/14.2	E. Poor 50/22.1
7. What is your family situation?	A. Living with parents, family harmony 45/19.9	B. Parents are away from home for a long time and raised from generation to generation. 94/41.6	C. Single parent families 54 /23.9	D. Reorganizing the family 33/14.6	

8. Parents' professional status?	A. Personnel of government agencies and institutions 5/2.2	B. Personnel of state-owned enterprises 3/1.3	C. Private enterprise personnel 48/21.2	D. farmer 98/43.4	E. other 72/31.9
9. How do you communicate with your parents?	A. OK 48/21.2	B. better 38/16.8	C. common 64/28.3	D. discrepancy 45/19.9	E. be poor 31/13.7
10. How well do you know your parents?	A. I know very well 68/30.1	B. understand 79/34.9	C. common 43/19.0	D. know little about 23/10.2	E. Have no idea at all. 13/5.8

3.3.4. Interview Results

Through the investigation, we know that the importance of classroom management in the five-year junior college of Z Vocational and Technical College has been confirmed. The interview shows that parents and school administrators are aware of the importance of classroom management, and only 6.7% and 7.1% of teachers and students think that the role of classroom management is unimportant.

Questionnaire on Classroom Management of Five-year College Department of Z Vocational and Technical College (teacher n=30)

Table 5. Dept. Z Questionnaire

question	Option (select number of people/proportion)				
1. What is your gender	A. Male 12/40	B. woman 18/ 60			
2. What is your educational background	A.Specialization 2 /6.6	B. undergraduate course 17/56.7	C. master 11/36.7	D. doctor 0/0	
3. About your weekly courses	Section A. 10 below 3/10	Section B. 12 8/26.7	Section C.12-16 10/33.3	Section D. 16-24 9/30	
4. What is your job position	A.First-line teacher 24/80	B.Full-time counselor 1/3.3	C.Part-time class teacher 2/6.7	D.administrative staff 3/10	
5.How long did you work in five-year higher vocational education	A.5 years and below 16/53.3	B. 6-10 years 7/23.4	C. 11-20 years 4/13.3	D. More than 3/10	
6. What do you think of the current learning status of students in the five-year junior college of Z Vocational and Technical College	A. Very good 0	A. good 2/6.7	C. General 9/30	D. Poor 18/60	E. Very poor 1/3.3
7. Do you think you have a heavy workload	A is very heavy. 16/53.4	B is heavier. 9/30	C suitable 4/13.3	D is easier 1/3.3	

8. Who do you think plays the biggest role in classroom management of the five-year junior college department of Z Vocational and Technical College	A. Instructor  3/10	B. Counselor or class teacher  7/23.3	C. Relevant management personnel  5/16.7	D. Students themselves  12/40	E. rents of students 3/10
9. According to your knowledge, the communication between parents and teachers after the students of the five-year junior college of Z Vocational and Technical College enter the school	A. regular communication  3/10	B. Occasionally communicate  4/13.3	C. Little communication  14/46.7	D. No communication  9/30	
10. What do you usually do when students in the five-year junior college of Z Vocational and Technical College have classroom management problems	A. Persuade and stop in time.  7/23.3	B. Severe criticism and forced prohibition  8/26.7	C. Generally, no matter  6/20	D. Hand it over to other personnel.  9/30	

#### 4. RESULTS

##### 4.1. Introduction

Five-year college students have taken the entrance examination in grade three of each school and made choices through certain scores. Students who have not taken the high school scores are selected on the basis of merit. Some students' bad behavior habits in junior middle schools still exist among students. They love playing mobile phones in class and even become obsessed with games, arriving late and leaving early, sleeping in class, eating, ignoring teachers' questions and making phone calls. Fighting, smoking, drinking, socializing with socially undesirable people and other off-class violations. No matter what kind of students' violation of discipline at school, it will seriously affect students' classroom order.

##### 4.2. Response Rate

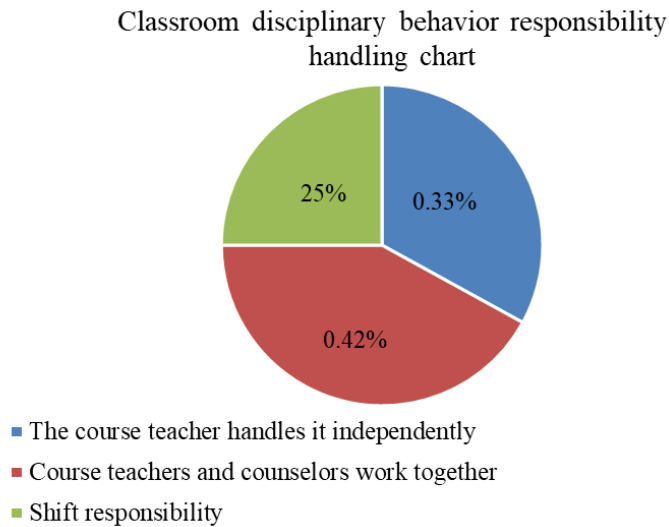
###### 4.2.1. The responsibilities of counselors and teachers are not clear

For students' disciplinary behaviors in class, counselors and teachers prevaricate. When there is a classroom problem, the teacher calls the counselor at the first time, asks the counselor to solve it, and stays out of it. The counselor will not solve it in time because he is busy with other things. Lost the timeliness of solving problems. In view of what happens during the class, the teacher will solve it in time, but when it happens, the first responsible person is still the counselor, and the counselor and the teacher will shirk each other, thinking that the teacher is the party concerned, which can solve the problems of classroom management at the first time and avoid the recurrence of contradictions. For classroom management problems, the responsibilities of counselors and teachers are not clear, and the school also does not distinguish the first responsible person.

At the same time, counselors and teachers lack of management ability in classroom management, which affects students' behavior education and cannot promote the formation of students' classroom management order.

According to statistics, 66 cases of classroom discipline violations occurred in the five-year junior college department of Z vocational and technical College in 2021, 22 cases of teachers independently solving students' disciplinary violations in class, 28 cases of students violating discipline during class, and teachers will contact counselors to cooperate. The instructor and the teacher blame each other for the occurrence of 16 examples of the following legend.

Table 6. Classroom disciplinary behavior responsibility handling chart



4.2.2. *There are many internal and external environmental problems in the classroom*

Classroom environment, including classroom brightness, classroom hygiene, humidity, air, classroom atmosphere and classroom area, will affect students' mood in class. Pleasant mood in class can enhance students' concentration and reduce classroom management problems. The classroom environment includes students' dormitories, places of entertainment, noise, safety and so on. The five-year college department of Z Vocational and Technical College is a branch campus of Z Vocational and Technical College. Compared with the general campus, the management is relatively loose and the conditions are relatively poor. This is also due to the relatively backward development of the five-year college department, the damp and messy student dormitories, the lack of air-conditioning fans in the small rooms for eight people, the hot winter in Leng Xia, and the outstanding classroom external environmental problems.

4.2.3. *Psychological problems faced by students*

Most of the students in the five-year college department of Z Vocational and Technical College come from rural areas, and many of them are left-behind children, who are supported by their grandparents. Grandparents love their children more than their parents, which leads to students' inferiority, anxiety, precocity, rebellious mentality and even depression. Some students have no independent values and have no expectations for their professional and personal future.

Students are seriously tired of studying, unwilling to study, uninterested in lectures and practice classes, yearning for their own future and having no goals. They are always reluctant to hand in their homework because they don't hand in my homework. I am blind in my studies.

In the past two years, the students in the five-year college department of Z Vocational and Technical College have not transferred to the post, but are still studying in the five-year college department. In the first year of freshman year, students have a sense of crisis, and they have a sense of crisis in the face of their future employment. Most students have no confidence in their future jobs. For the current employment situation, the graduates of higher vocational colleges have great competition. Faced with the fierce market competition, they are at a loss and make uneasy progress.

Whether it's students' inferiority complex, weariness of learning and anxiety in employment, it can affect students' classroom management.

4.2.4. *The selection of teaching materials is chaotic, which affects the teaching effect*

Part of the curriculum of students in five-year colleges and universities is chaotic, and the curriculum is not consistent with the students' actual school process, and there is a lack of mutual penetration between disciplines. For

example, if the same type of textbooks have different names, the contents of the textbooks are the same, and they are distributed to students in different periods, which delays students' learning, and students lose their confidence in learning, thus affecting the teaching effect.

#### *4.3. Analysis of the Causes of Problems*

##### *4.3.1. The low quality of school enrollment increases the difficulty of classroom management*

Students in the five-year junior college department are in the 2+3 mode, with two years of secondary school study and three years of junior college study. Students graduated from junior high school and came to school to study. Generally, they are 13 to 15 years old, and they are still young. It is understood that many families choose majors, usually by parents, but most parents don't know much about majors, so they choose a certain major. As a result, students don't know and understand their future professional knowledge and professional development. Therefore, it affects students' interest in studying specialized courses, and they can't concentrate on studying specialized courses. Some students lack willpower, forming a kind of psychology that they only need to get a diploma after graduation. Long-term development of students has led to a series of disciplinary behaviors such as late arrival, early departure and truancy, which seriously affects students' classroom learning.

When students first come to the school, they will not adapt to the management mode of the new school. First of all, the first thing for students to come to school is military training. Many students' military training education can't reach the standard. Many students lack exercise, weak willpower, improper attitude and no sense of discipline. These students already have these bad phenomena in junior high school, and bringing them to new schools will inevitably increase the difficulty of classroom management in schools.

Secondly, there is a great reversal in students' learning, from teachers' chasing and learning to students' autonomous learning, and students' psychological needs have changed greatly. Some students may have a class teacher staring at them in junior high school, but no one is staring at them when they come to the five-year college department to study, and they lack their own willpower and motivation in learning. Finally, students come to a new school, in a new environment, with a young age, and need some time to adapt. Junior high school is close to home, so they may not be homesick. They enter a five-year college department, which is far from home, and some students who don't adapt feel homesick. At the same time, students come from different places, different families, and have different living habits. It is inevitable that there will be some conflicts, which will affect students' interpersonal relationships, resulting in classroom management problems.

School management is relatively backward in all aspects.

The management division of the five-year college department is not clear. In the whole running process of the department, the functions and powers of the educational administration and student administration departments are not clear, which increases the workload of the student administration department and weakens the workload of education administration. Once there is a problem, the student management department will come forward to solve it, and it has little to do with the teachers in the educational administration department. Many of the management work of the department is almost grasped by the top leaders of the hospital department. If there is any problem, the top leaders of the hospital department should be consulted, because only he can solve it, which is also the unclear division of labor of the management. The whole department implements traditional administrative management, which needs to construct modern and reasonable scientific management, which is of great significance to classroom management.

School hardware facilities are not perfect.

Five-year college departments are relatively backward in the information learning of departments. The school installed multimedia computers in each classroom in 2022. Before that, the traditional teaching mode was always implemented. Due to the large number of students, small classrooms, noisy classrooms, playing mobile phones or sleeping, the classroom efficiency was seriously reduced. Students' training rooms are short of equipment. There are less than one computer in the computer room, not enough parts in the mechanical training room, and even some majors don't have training rooms. Students' accommodation can't be completely guaranteed in living conditions. Seven or eight students have a small room, the ground is wet, drying clothes is a problem, there is no fan air conditioner in hot summer, and there is no warm-keeping facility in winter, all of which make students have bad psychological effects.

#### 4.3.2. *The Impact of Social and Cultural Development Classroom Management*

With the development of social culture, school management has abandoned the traditional management mode and changed to the thinking of serving students. For students' classroom management, teachers' classroom management is weakened. Traditionally, it is natural to punish students in education, but now, because parents are too fond of students, with the development of information technology, teachers are inevitably involved in public opinion, which virtually increases the pressure of teachers, weakens the punishment and makes students difficult to manage. If students make mistakes that are difficult to correct, are not corrected in time, and do not obey the management of teachers and schools, big problems will be formed. Appropriate punishment is conducive to students' self-development and classroom management.

Bad social culture affects students' classroom learning.

With the continuous development of social and cultural industries, material civilization and spiritual civilization have enriched people's lives, and there has been a great change in their thinking. The society is diversified and the life is colorful. It not only brings advantages to students, but also disadvantages to students. The culture is mixed, and the five-year college department is in the period of value development. Some students can't distinguish right from wrong, have low self-control and are easily tempted.

With the progress of social science and technology, it has become an important problem for students to surf the Internet in class. Students are immersed in online games, making friends online, and some students spend all their energy on the mobile phone network, neglecting their study, thus affecting the normal order of class.

With the rapid development of information resources and the rapid update of media, students are easily exposed to social violence, pornography and vulgar and vulgar content. In recent years, the word "online celebrity" has a great influence on students. Some students think of the idea of becoming famous overnight, and publish their life content on the platform, in order to pursue traffic, attract attention, and fantasize about taking shortcuts, which will make students feel useless in reading.

#### 4.3.3. *Lack of family education*

Most of the students in the five-year college are from rural areas, and their family living conditions are not very rich. Many students' parents work outside the home, and the left-behind students live with their grandparents. Grandparents' cultural knowledge is weak, so they can't give students a good educational environment. They think that as long as students eat well and live well, it's ok. Even some parents think that the school is a closed school, and everything is in charge. As long as students are sent to school, parents don't care. This attitude doesn't show caring for their children. Some parents' educational level is not high, so they can't educate students rationally, solve students' problems in all aspects, and give guidance. At the same time, it also affects the relationship between students and parents, and virtually affects students' learning.

*Influence of Family Relationship on Students' Mental Health*

The relationship between parents has an important impact on students' mental health. When students are teenagers, their emotional development is very delicate, and conflicts between parents easily lead to changes in children's mental function and psychological trauma. If it's a divorced family, the children will have an inferiority complex or mental stress, which is not conducive to the healthy development of students' psychology. In adolescence, students still depend on their parents, need their parents' more care, and need their parents to consider from the perspective of students to promote their healthy development.

*Obstacles of Family Economic Pressure to Students' Classroom Psychology*

With the development of society, the gap between the rich and the poor is widening in family economic situation. Students in five-year colleges are mainly from rural areas, and their economic conditions are on the lower side. Many parents are busy with their family economy and have no time to take care of their students' educational growth. If students are not guided in time in the process of growth, they will have blind comparison psychology, resulting in ideological deviation. As the students of five-year junior college grow older, some students spend money such as running water, making up, eating and drinking, buying brand clothes, etc. in order to show off and keep up with the joneses, which completely influences the students to form correct values. Some students will paint their eyebrows and lipstick in class, which completely affects the normal classroom order.



#### 4.3.4. *The ability of some teachers in five-year colleges can't keep up*

Teachers' own ability is not enough. There are fewer young teachers in schools, and many young teachers get qualification certificates after taking up their jobs, while many older teachers are reluctant to study more. There are fewer "double-qualified" teachers with high academic qualifications, more teachers with bachelor degree, and the overall teaching quality is not high. Vocational education requires teachers to have both theoretical knowledge and practical ability. As far as the current situation of five-year college teachers is concerned, some teachers are strong in theory and some are better in practice. For students, the combination of learning theory and practice is affected, and the classroom is so boring that students lose interest in learning.

##### Teachers' ideological deviation

Teachers in five-year colleges and universities have great ideological deviation. Some teachers have different views on students. They think that students don't study well in junior high school, and those who come to five-year colleges and universities are all poor students. This idea is brought directly to the classroom, and they have a weak sense of responsibility in class, which leads to confusion in classroom management. When classroom problems arise, they are handed over to counselors, which completely affects the implementation of classroom management. This kind of teachers' ideological concepts deviate, lose their personality charm to students, and also affect the image of teachers. They fail to be dedicated to their jobs, love students, and lose students' trust in teachers, which is not conducive to the development of the relationship between teachers and students, and is one of the factors affecting classroom management.

Class counselors have strong management intensity and heavy tasks.

Because the students in the five-year junior college department are young, the whole school management is still in accordance with the management style of junior college students. For the study and life arrangement of the two-year secondary school students, the counselors manage 2-4 classes and teach more than 12 classes at the same time. Counselors not only manage students, but also need to prepare lessons and attend classes, which is a heavy task. Many times, there are problems in the class, so counselors can't have it both ways. There are few teachers in the school, and most of them need to be part-time substitute counselors, resulting in the counselors' negligence in class management.

## 5. DISCUSSION, CONCLUSION AND RECOMMENDATION

### 5.1. *Introduction*

With the development of social economy, the demand for talents in the market is increasing, and vocational education and training of skilled talents is the main force. In recent years, the state has continuously introduced new policies to support the development of vocational education. On October 18th, 2017, Comrade Xi Jinping pointed out in the report of the 19th National Congress that it is necessary to deepen the integration of production and education. In recent years, five-year higher vocational colleges have cooperated with many enterprises to achieve a win-win mode of integration of production and education and cooperation between schools and enterprises. To some extent, it promotes the curriculum management of five-year higher vocational colleges and improves the teaching quality of five-year higher vocational colleges. In recent years, relevant policies, regulations and documents have been issued for policy management in higher vocational colleges. However, there are few relevant policies for the five-year college, the low registration rate, the difficulty of enrollment, and the society's views on the five-year college in recent years, all of which require more relevant national departments to issue relevant policies, regulations and documents on the five-year college. Guarantee the status of five-year college students, standardize relevant laws and regulations, and guide the development of five-year college education.

#### 5.1.1. *Deepen the integration of production and education, school-enterprise cooperation, and ease the economic pressure.*

The funds of five-year college mainly come from the state financial funds, with less social donations and career income. Therefore, there is little economic investment in five-year colleges. In recent years, the cooperation between schools and enterprises and the deepening of the integration of production and education are conducive to the joint training of talents by schools and enterprises, and reduce the expenditure of five-year college funds. Realize the cooperation between schools and enterprises to educate people in various fields, improve innovative and applied professional talents in an all-round way, and alleviate the contradiction between supply and demand of talents.

## 5.2. Recapitulation of the Study's Findings

### 5.2.1. Improve school management innovation and deepen management reform

Five-year college departments need to constantly pursue the quality of running schools and constantly improve management innovation, which is also the requirement of modern education management. Modern management requires managers to adopt new ideas, new thinking, and change and innovate beyond conventional thinking. In view of the development of vocational education, leaders must have the consciousness of strengthening their own management and deepen their self-connotation. Strengthen the leading group and cultivate high-quality leading group talents. Give full play to teachers' work enthusiasm and create excellent classrooms. Broaden the core of quality education and cultivate moral talents.

### 5.2.2. Cultivate "double-qualified" talents and improve their quality

The state is vigorously developing vocational education, and its scale is constantly expanding. Teachers are very important. Double-qualified teachers are the basic requirement for teachers to develop vocational education, which requires teachers to have certain theoretical foundation, practical ability and strong guiding ability. Both ability and professional quality are excellent. It can improve the quality of talents in vocational colleges, and it is also one of the important results of running vocational colleges.

### 5.2.3. Optimize the internal and external environment of the campus and improve the guarantee of hardware facilities.

The campus environment includes desks, experimental instruments, books and materials, teaching equipment and problem equipment. The external environment of the campus includes teachers, dormitories, offices, laboratories, playgrounds, canteens and other greening facilities. From the internal and external environment of the school, it can be seen that the school must strengthen the infrastructure construction, improve the conditions for running schools, and provide the students with infrastructure guarantee. Schools need to increase investment, improve old and old experimental equipment and add new teaching equipment. Improve classroom space, rectify dormitory conditions, and build playgrounds and green belts. Continuously improve the support of hardware facilities, reform the logistics management system, establish a high-quality evaluation mechanism of logistics support, improve the service level, and let students enjoy excellent service support.

## 5.3. Discussion

Strengthening the construction of students' spiritual civilization is the development requirement of the times. Excellent campus culture can enhance school-running characteristics and stimulate students' learning motivation. Campus culture construction includes establishing a sound guiding ideology for running a school, optimizing school management, and establishing a good style of study, school spirit and teaching style. Create a good school spirit, actively promote the construction of network culture, strengthen network supervision, make rational use of new media, enrich information resources, supplement and update classroom content, strengthen the learning atmosphere, and stimulate students' interest in learning.

### 5.3.1. Establish a harmonious family relationship and promote a happy family atmosphere

In many family relationships, the closer the family relationship is, the higher the students' mental health index is. On the contrary, the worse the family relationship is, the lower the mental health index is, which shows how important the family relationship is to students' mental health. Therefore, family harmony and mutual love between parents can create a harmonious family atmosphere for students. In addition, parents and students should establish a good parent-child relationship, which requires students to communicate with their parents constantly, always think from the perspective of students, respect students' decisions, help students establish correct values, arouse students' resonance, and thus promote the relationship between parents and children.

### *5.3.2. Parents should improve their own literacy and change their traditional educational concepts*

With the continuous development of society, parents need to improve their self-accomplishment, which directly affects the way of educating their children. Learning more and changing the traditional educational concept, stick education has not adapted to the current development of education. With the improvement of educational level, parents' educational ability will be improved, and students' mental health will be mastered. Five-year college students are teenagers, which is a critical period for students' growth. Parents need psychological counseling, more communication, no excessive pressure and more attention to their children's psychological characteristics.

### *5.3.3. Comprehensively cultivate students' positive and healthy psychological level*

During the period of students' school, parents communicate with students and care for them all the time. In the special period of students' growth, they don't have enough judgment. In view of some students' bad behaviors such as depression, comparison and falling into online games, they need parents' help and guidance. To improve the classroom management of the five-year college, we need the support of every parent, help the students of the five-year college to establish a correct world outlook, outlook on life and values, and help them establish a correct learning attitude.

## *5.4. Delimitation of the Study*

### *5.4.1. Teachers improve classroom teaching from the perspective of students*

Students are the main body of the classroom, and teachers are only the organizers and designers of the classroom. Therefore, teachers must start from the students' point of view in curriculum setting. Five-year college students come from different junior high schools, and their learning and growth backgrounds are different. Therefore, students' level of learning knowledge is different. For students' orientation, we must combine their thoughts, school conditions and physical and mental development characteristics, and take targeted measures to cultivate students' learning habits. Starting from the reality of five-year college students and combining with the characteristics of teaching materials, we should stimulate students' learning potential, mobilize their thinking ability, establish an active classroom and create a harmonious classroom atmosphere.

### *5.4.2. Establish a strict classroom management system to enable students to develop good study habits*

In order to ensure that every student's study is guaranteed, we must do a good job in the school classroom management system, and formulate and implement the classroom management system. It is a good starting point for teachers in classroom management. It is strictly forbidden for students to violate the following behaviors, such as not being late for class and leaving early, teachers calling the roll in time, and students not doing little tricks in class, such as eating, making up, wearing headphones, and playing with mobile phones. Keep the classroom clean and tidy without bringing teachers into the classroom. Don't chat in class, don't ask for leave at will, and strictly abide by the regulations of the training room. For the students who violate the above rules and regulations, once found, the teachers will deal with them in time and make appropriate punishment, so that the students can learn from them. Teachers and students should stick to the system, form students' self-habits and improve students' self-management ability.

## *5.5. Conclusion*

In the era of new media, teachers should fully understand the characteristics of new media, and make rational use of new media to teach students, so that the classroom can be integrated with new media, which can be beneficial to improve classroom efficiency. In classroom management, teachers should consider how students learn. The purpose of teaching is to improve students' learning efficiency and make them become the main body of the classroom. In the classroom, teachers can use new media to design course content and display it through images, animations, videos and other means to help students actively understand the essence of things. In the whole course design, students fully participate and make students become the main body of classroom management, so that every student has something to do, which can increase students' learning initiative.

From the perspective of social environment, to improve the classroom management of five-year colleges and universities, we should guide the society to positively evaluate vocational education, correct prejudice and discrimination, and create a good social atmosphere in which vocational education is valued, vocational students are respected, skills are advocated, and all sectors of society fully support the development of five-year higher vocational education. Public opinion should publicize more positive energy, eliminate the erosion of negative thoughts on campus, help five-year higher vocational students form a positive world outlook, outlook on life and values, and help them establish a correct learning attitude. Enterprises should enhance their social responsibility and take technical measures to reduce the influence of bad network culture on five-year higher vocational students. Employers should change the concept of "education-only theory" and realize that students in five-year higher vocational colleges not only have strong practical ability, but also have certain theoretical knowledge. Employers should actively cooperate with the national policy of integration of production and education, actively participate in school-enterprise cooperation, and provide superior conditions to support the internship and employment of five-year higher vocational students.

### 5.6. Summary Recommendation

In recent years, in order to cultivate high-quality applied talents, the state attaches great importance to higher vocational education, and five-year higher vocational education has also been vigorously developed. Especially in recent years, the state has provided financial support to secondary vocational education, basically exempting the tuition fees of poor rural and urban students, reducing the economic pressure of students, promoting the enrollment of five-year higher vocational education, and expanding the scale of students. However, there are still many problems in five-year higher vocational schools, such as students' violation of discipline and unclear classroom management responsibilities.

Under the current background of classroom management in five-year higher vocational colleges, this paper takes the five-year college department of Z Vocational and Technical College as an example, and draws lessons from other classroom management experiences, analyzes the current situation of curriculum management in the five-year college department of Z Vocational and Technical College, finds out the problems and existing reasons in classroom management, and provides curriculum management countermeasures from four aspects. To solve the problem of five-year classroom management, relevant departments need to strengthen economic and policy support, deepen the integration of production and education, and cooperate with schools and enterprises. In school management, we should improve the software strength and hardware configuration, optimize the innovation and reform of school management, cultivate outstanding talents, improve the quality of talents, optimize the internal and external environment of campus, strengthen the construction of campus culture, and stimulate students' learning motivation. In terms of students' families, we should create a good family environment, improve students' mental health level, and parents should improve their own literacy, change their educational concepts, and comprehensively cultivate and improve students' positive and healthy mental level. Teachers should strengthen the management of students' education. Teachers should improve classroom teaching from the perspective of students, formulate strict classroom management system, make rational use of new media, and make students become the main body of learning.

Papers should keep pace with the times and meet the needs of the times. There are still many shortcomings in the research of my thesis, so please criticize and correct me. I also hope that my thesis can inspire educators, change the present situation of classroom management, make classroom management more standardized and scientific, and make five-year higher vocational education have a more brilliant development.

### References

- [1] Cheng Xintai. (2018). Problems and Countermeasures of Chinese Teaching in Five-year Higher Vocational Education. *Health Vocational Education* (09),61-62.
- [2] Chen Xin. (2020). Professional Curriculum Development and Construction of Five-year Higher Vocational Education. *Jiangsu Education* (44),62-67.
- [3] Guo Xiaoying. (2019). On the people-oriented classroom management in higher vocational colleges-taking Songshan Shaolin Wushu Vocational College as an example. *Academy* (02),75-76.
- [4] Guo Peng. (2016). On the strategies of classroom management in higher vocational colleges. *Peer* (11),132.
- [5] Gu Fei, Wang Ru-rong, Hua Rong & Wang Bin. (2021). Research on the strategies of classroom management in higher vocational colleges from the perspective of educational ecology. *Changsha Institute of Aviation Technology*. (03), 55-58. doi: 10.13829/j.cnki.issn.1671-9654.2004187575

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- [6] He Xinzhe. (2018). Research on the Five-year Education Model of Sino-foreign Cooperative Education in Higher Vocational Colleges in China (Doctoral Dissertation, East China Normal University).
- [7] Hao Yunliang. (2021). Evaluation of Five-year Higher Vocational Education: Dilemma and Breakthrough —— Thinking Based on the Present Situation of Five-year Higher Vocational Education in Jiangsu Province. *Vocational Education Bulletin* (11),62-71. doi:
- [8] Huang Zhangyong. (2019). Research on Problems and Countermeasures in English Teaching in Five-year Higher Vocational Colleges. *English Square* (01), 61-62. doi: 10.16723/j.cnki.yycg.2019.01.027.
- [9] Jing Wei. (2016). Research on Classroom Teaching Management Strategies of Higher Vocational Teachers (Master's Thesis, Liaoning Normal University).
- [10] Ji Qing. (2008). Research on the connection between basic physics courses and professional courses in five-year higher vocational colleges (master's thesis, Suzhou University).
- [11] Ni Zhongfa. (2011). Thoughts on improving the quality of five-year higher vocational education based on "classroom management". *Science and Technology Information* (31),359.
- [12] Qian Mingzhu. 2013 On Effective Classroom Management Zhengzhou Jiaotong Vocational and Technical College
- [13] Shang Fei. (2020). Research on the Five-year Education Model of Sino-foreign Cooperative Education in Higher Vocational Colleges in China. *Huapao Technology and Market* (02),105. doi:
- [14] Shao Zhaoguo. (2019). Research on Problems and Strategies of Classroom Management in Five-year Higher Vocational Colleges (Master's Dissertation). Shandong Normal University.
- [15] Sharp. (2014). On the classroom management of five-year higher vocational students. *Value Engineering* (20), 252-253. doi: 10.14018/j.cnki.cn13-1085/n.2014.20.492.
- [16] Wang Qi. Lv Qian. (2019). Analysis on the curriculum reform of five-year vocational video communication major in the new media era-taking Shandong Huayu Institute of Technology as an example. *Changjiang Series* (32),15-16.
- [17] Xu Ling. (2018). Analysis of employment status and countermeasures of fresh graduates majoring in dance in five-year higher vocational education (master's thesis, Jiangxi Science and Technology Normal University).
- [18] Yan Aiping. (2019). Research on classroom management methods in higher vocational colleges under the background of information-based teaching. *Teaching Research Professional Committee of Guangxi Writing Society. (eds.) Teacher Education Forum (Series 5)* (pp.617-619).
- [19] Yangliu. (2013). Analysis of the phenomenon of low registration rate of students admitted to five-year higher vocational colleges (Master's thesis, Sichuan Normal University).
- [20] Yao Lixia. (2010). Investigation on the current situation of five-year vocational college students' weariness, causes and countermeasures (master's thesis, Shanghai Normal University).
- [21] Zhang Guiying. On classroom management in higher vocational colleges from the perspective of positive psychology [C]//2011 Annual Conference of Psychological Quality Education in Beijing Colleges and Universities and Compilation of Papers from the Seminar on Theory and Practice of Psychological Quality Education in Beijing Colleges and Universities. [Publisher unknown ],2012:18-21.
- [22] Zhu Wenfu. (2014) Development Trend of Foreign Vocational Education *Journal of Hebei University (Philosophy and Social Sciences Edition)*
- [23] Zhong Yanjin, Duan Shimin. Analysis of classroom management problems and countermeasures in higher vocational colleges in the new media era [J]. *Journal of Jiujiang Vocational and Technical College*, 2015 (04): 1-3. doi: 10.16062/j.cnki.cn36-1247/z.2015.04.001.

**Appendix 1****Questionnaire on Classroom Management of Five-year College Department of Z Vocational and Technical College (Students)**

Dear classmate:

Thank you for participating in this survey. In order to deeply understand the classroom management of the five-year college department of Z Vocational and Technical College, improve the classroom management and improve the quality of education, we specially organize a survey of the students in the five-year college department of Z Vocational and Technical College. This questionnaire is anonymous and private, and is only used for education, teaching and research. Any personal information will be kept strictly confidential. Please fill it out truthfully and thank the students for their cooperation. Unless otherwise specified, the following items are single choice questions.

1. Your gender is () A. Male B. Female.
2. You come from () family A. Town B. Countryside
3. Is it the only child () A. Yes B. No.
4. Your grade ()  
A. Grade 1 B. Grade 2 C. Grade 3 D. Grade 4 E. Grade 5 (internship stage)
5. Family monthly income status ()  
A. below 2,000 yuan, A. 2000-5,000 yuan, C. 5000-10000 yuan and D. 1,000 yuan.
6. Family atmosphere ()  
A. Good B. Good C. Average D. Poor E. Poor
7. Your family situation ()  
A. Living with parents and having a harmonious family B. Parents are away for a long time and raised from generation to generation.  
C. Single-parent families D. Reorganizing families
8. Parents' professional status ()  
A. Personnel of government agencies and institutions B. Personnel of state-owned enterprises C. Personnel of private enterprises D. Farmers E. Others
9. Your communication with your parents ()  
A. Good B. Good C. Average D. Poor E. Poor
10. How well do you know your parents ()  
A. Know B. Know C. Generally D. Don't know E. Not at all.
- 11. The reason why you chose Z Vocational and Technical College as a five-year junior college major is ()**  
A. Junior high school teachers recommend B. Obey parents' arrangement C. See the class report and follow it yourself.  
D. I like my major in five-year higher vocational education. E. I can't get into high school and choose it at random.
- 12. Your learning motivation after attending the five-year junior college department of Z Vocational and Technical College is ()**  
A. It doesn't matter if you can't learn well, mainly for the sake of mixing diplomas. B. Lay a good foundation and strive for higher-level school study.  
C. Learn professional knowledge and skills well, and find a good job after graduation D. Being young, parents let them stay at school.  
E. Other

13. How is your interpersonal relationship with classmates and teachers ()  
A. Very good B. Good C. Average D. Poor E. Very poor
14. What are your plans for your future ()  
A. detailed and long-term planning B. general planning C. short-term goals D. no planning and goals.
15. What do you think of the influence of interpersonal relationship on classroom management ()  
A. Very big B. Big C. Some influences D. Basically no E. No.
16. What do you think of the role of classroom management in the five-year junior college department of Z Vocational and Technical College ()  
A. Very important B. More important C. Important D. Generally important  
E. Not important
17. Your satisfaction with the current situation of classroom management in five-year higher vocational colleges ()  
A. Very satisfied B. Satisfied C. Average D. Not satisfied E. Very dissatisfied
18. What do you think are the main problems of classroom management in the five-year junior college of Z Vocational and Technical College () (multiple choices are allowed)  
A. teacher's teaching and management effect B. interpersonal relationship C. classroom environment  
D. Other aspects that you think
19. Do you think that the main influencing factors of classroom management in the five-year junior college of Z Vocational and Technical College include () (multiple choices are allowed)  
A. school management factors B. classroom internal and external environment factors C. teacher factors D. students' own factors E. social factors F. curriculum factors such as teaching materials and syllabus G. school hardware and software facilities factors  
H. Other factors
20. What do you think is the most important task of classroom management in the five-year junior college department of Z Vocational and Technical College ()  
A. Improve students' learning enthusiasm, ensure teaching effect and accomplish teaching objectives.  
B. Reduce violations of discipline and maintain classroom discipline  
C cultivate students' self-control management ability and promote their long-term development.  
D. Implement the school and class system and maintain the prestige of counselors.

This is the end of the questionnaire. Thank you again for your understanding and support. In view of the current classroom management problems in the five-year junior college department of Z Vocational and Technical College, if you have other comments and suggestions, please write them below:

## Appendix 2

### Questionnaire on Classroom Management of Five-year College Department of Z Vocational and Technical College (Teacher)

Dear teacher:

Hello! Thank you for participating in this survey. This survey is specially organized in order to deeply understand the classroom management of the five-year college department of Z Vocational and Technical College, improve the classroom management and improve the quality of education. This questionnaire is anonymous and private, and is only used for education, teaching and research. Any personal information will be kept strictly confidential. Please fill it out truthfully and thank you for your cooperation. Unless otherwise specified, please

Each item is entitled multiple choice questions.

1. Your gender is ()

A. Male B. Female

2. Your educational background is ()

A. specialist B. undergraduate C. master D. doctor

3. Your weekly course is about ()

Section A. 10, section B.12, section c.12-16, section d.16-24

4. Your job position is ()

A. frontline teachers B. full-time counselors C. part-time class teachers D. managers

5. How long did you work in five-year higher vocational education ()

A. 5 years and below B. 6-10 years C. 11-20 years D. More than 20 years

6. What do you think of the current learning status of students in the five-year junior college of Z Vocational and Technical College ()

A. Very good B. Good C. Average D. Poor E. Very poor

7. Do you think you have a heavy workload ()

A is very heavy, B is heavier, C is appropriate, D is easier.

8. Who do you think plays the biggest role in classroom management of the five-year junior college department of Z Vocational and Technical College ()

A. Instructor B. Counselor or class teacher C. Relevant management personnel  
D. Students themselves E. Parents of students

9. According to your knowledge, the communication between parents and teachers after the students of the five-year junior college of Z Vocational and Technical College enter the school ()

A. frequent communication B. occasional communication C. seldom communication D. no communication.

10. What do you usually do when students in the five-year junior college of Z Vocational and Technical College have classroom management problems ()

A. Persuade and educate and stop it in time B. Severely criticize and forcibly prohibit it.

C. Generally, D. will be handed over to other personnel.

1. What do you think of the role of classroom management in the five-year junior college department of Z Vocational and Technical College ()

A. Very important B. Very important C. Generally important D. Important E. Not important



12. Your satisfaction with the status quo of classroom management in five-year higher vocational colleges ()  
A. Very satisfied B. Satisfied C. Average D. Not satisfied E. Very dissatisfied

13. What do you think are the main problems of classroom management in five-year colleges () (multiple choices are allowed)

A. teacher's teaching and management effect B. interpersonal relationship C. classroom environment  
D. Other aspects that you think

14. In your opinion, the main influencing factors of five-year classroom management problems include () (multiple choices are allowed)

A. school management factors B. classroom internal and external environmental factors C. teacher factors D. students' own factors E. social factors F. school hardware and software facilities H. others

15. What do you think is the most important task of classroom management in the five-year junior college department of Z Vocational and Technical College ()

A. Improve students' learning enthusiasm, ensure teaching effect and accomplish teaching objectives.  
B. Reduce violations of discipline and maintain classroom discipline  
C cultivate students' self-control management ability and promote their long-term development.  
D. Implement the school and class system and maintain the prestige of counselors.

This is the end of the questionnaire. Thank you again for your understanding and support. If you have any comments and suggestions on the classroom management of the five-year junior college of Z Vocational and Technical College, please write them below:

### **Appendix 3**

#### **Interview outline**

##### **I. Interviews with Parents of Students**

1. Do you communicate with your children in Takuwa once to find out about their school situation? What are your expectations for his studies?
2. How do you know the importance of classroom management in the current five-year college department? What are the problems in classroom management? How to improve?
3. Who do you think can play a better role in classroom management in five-year colleges? What are the main causes of classroom management problems in five-year colleges?

##### **II. Interviews with relevant school administrators**

1. Please talk about your views on classroom management of the five-year junior college department of Z Vocational and Technical College.
2. Are you satisfied with the current classroom management of the five-year junior college department of Z Vocational and Technical College? What problems do you think exist? How to solve these problems?
3. As far as our school is concerned, what do you think are the similarities and differences between classroom management in five-year colleges and other academic systems?
4. What do you think of the importance of classroom management in five-year colleges?
5. What do you think can effectively improve the quality of classroom management? Please make relevant suggestions.

# Performance Assessment of Lean Six Sigma Project Management Methodology Using DEMATEL Technique

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## Abstract

In the early 1990s, companies started to use information technology and software engineering, which encouraged the organizations for employing project management methodologies to survive and then advance in competitive technologic environment. Use of project management methodologies provides efficient planning, budgeting and scheduling processes and high management quality for companies. The objective of this paper is to reveal performance indicators of lean six sigma project management methodology employing Decision Making Trial and Evaluation Laboratory (DEMATEL) technique. The presence of interrelationships among evaluation criteria leads to utilize DEMATEL methodology as an appropriate tool. The case study is conducted in a bank that performs in Turkey.

**Keywords:** Project management, lean six sigma, DEMATEL

## 1. INTRODUCTION

A lot of different methodologies were developed and used to reach better ways of defining the project requirements, analyzing the problem, and implementing it in a systematic manner. Waterfall project management methodology is linear and sequential; however, it is mostly ineffective in defining the needs of customers, managing cost, frequently changing project requirement, and delivery time. In 2001, agile project management methodology came forward in response to cope with waterfall project methodology's limitations that arise from unpredictability of technology evolution, customer requirements, and unstable business environments [1]. Agile project idea is an iterative method in which project processes are planned and managed. As in agile software development, an agile project is accomplished in small pieces that are named iterations. The project team, which should contain representatives of the stakeholders of the project, review and criticize each section or iteration. The results obtained from an iteration are used to decide the following project phase [2]. Lean Six Sigma (LSS) that is the newly developed approach was discovered with the combination of two different concepts, which are named as lean and six sigma [3]. Its goals are boosting shareholder worth by enabling high quality, speed, customer satisfaction and costs. Tools and principles of Lean and Six Sigma have to be integrated with a harmony. Six sigma project management methodology focuses on accuracy and precision, however lean project management methodology concentrate on efficiency and speed. Lean

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provides efficient resource utilization, whereas six sigma enables that work should be done without doing any error [4].

This work introduces Decision Making Trial and Evaluation Laboratory (DEMATEL) technique to determine the importance degrees of performance factors of lean six sigma project management methodology. The presence of interrelationships among evaluation criteria leads to utilize DEMATEL methodology as an appropriate tool. The case study is conducted in a bank that performs in Turkey.

The remaining sections of the paper are organized as follows. Section 2 explains briefly DEMATEL methodology. The following section illustrates the application via a case study conducted in a bank performing in Turkey. Final section delineates conclusions and future research directions.

## 2. DEMATEL TECHNIQUE

The DEMATEL methodology developed by the Science and Human Affairs Program of the Battelle Memorial Institute of Geneva between 1972 and 1976 [5,6]. Based on the graph theory, the DEMATEL method can divide multiple factors into a cause-effect group, and it enables the decision maker to visualize influences between criteria with a network relationship map [7].

The method begins by generating the initial direct influence matrix  $A$ . The elements  $a_{ij}$  of the matrix  $A$  represent the direct influence of each factor  $i$  exerts on each factor  $j$ , evaluated by a decision maker. The matrix  $A$  is normalized by using (1) and it is named as the matrix  $D$  [8].

$$D=s.A, \tag{1}$$

where

$$s = \min \left[ \frac{1}{\max_{1 \leq i \leq n} \sum_{j=1}^n |a_{ij}|}, \frac{1}{\max_{1 \leq i \leq n} \sum_{i=1}^n |a_{ij}|} \right] \tag{2}$$

The total relation matrix  $T$  is defined as  $T = D(I - D)^{-1}$  where  $I$  is the identity matrix. Define  $r$  and  $c$  be  $n \times 1$  and  $1 \times n$  vectors representing the sum of rows and sum of columns of the total relation matrix  $T$ , respectively. Suppose  $r_i$  be the sum of  $i^{\text{th}}$  row in matrix  $T$ , then  $r_i$  shows both direct and indirect effects given by factor  $i$  to the other factors. If  $c_j$  denotes the sum of  $j^{\text{th}}$  column in matrix  $T$ , then  $c_j$  shows both direct and indirect effects by factor  $j$  from the other factors [7].

When solving a decision-making problem, the use of DEMATEL method enables also the decision maker to obtain the importance weights of the criteria, in addition to its ability to visualize the interactions between them.

The degree of importance for a factor  $i$  is considered as equals to the sum  $(r_i + c_j)$  when  $j=i$ . A network relationship map which explains the structural relations among factors can be obtained by setting up a threshold value which is determined by the decision makers. Additionally, the difference  $(r_i - c_j)$  represents the net effect that factor  $i$  contributes to the system. A factor  $i$  is a net causer if  $(r_i - c_j)$  is positive, and when  $(r_i - c_j)$  is negative, factor  $i$  is a net receiver [7].

## 3. CASE STUDY

This work presents a DEMATEL approach for evaluating success factors of lean six sigma project management. The case study is conducted in a bank located in Turkey through three managers' opinions. Initially, factors that are determined by interviewing the decision makers, are delineated in Table 1.

Table 1: Performance factors of lean six sigma project management methodology

Label	Criterion
C <sub>1</sub>	Clear requirements and specifications
C <sub>2</sub>	Understanding the tools and techniques
C <sub>3</sub>	Structured project procedure and progress reporting

Label	Criterion
C <sub>4</sub>	Effective project manager skills
C <sub>5</sub>	Project complexity

The experts provide their opinions by reaching a consensus and they used the linguistic scale shown in Table 2.

Table 2: Linguistic Scale

No influence	0
Very low influence	1
Low influence	2
High influence	3
Very high influence	4

The obtained initial direct influence matrix is shown in Table 3.

Table 3. Initial direct influence matrix

	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>
C <sub>1</sub>	0	0	1	0	0
C <sub>2</sub>	1	0	0	0	0
C <sub>3</sub>	0	2	0	3	3
C <sub>4</sub>	0	0	4	0	2
C <sub>5</sub>	0	2	0	0	0

The weights of factors are calculated as in Table 4.

Table 4: Importance weights

Label	Criterion	Weight
C <sub>1</sub>	Clear requirements and specifications	0.067
C <sub>2</sub>	Understanding the tools and techniques	0.142
C <sub>3</sub>	Structured project procedure and progress reporting	0.332
C <sub>4</sub>	Effective project manager skills	0.282
C <sub>5</sub>	Project complexity	0.177

#### 4. CONCLUSIONS

To obtain the importance weights of performance factors of lean six sigma project management framework, evaluation criteria are determined through expert opinions and then algorithm of the work is reported by considering DEMATEL technique. Importance weights of criteria are assigned by applying DEMATEL methodology, structured project procedure and progress reporting is the most important performance factor however clear requirements and

specifications is the least important factor. Future research will focus on proposing group decision making approaches for this evaluation.

### Acknowledgements

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### References

- [1] Lei, H., Ganjeizadeh, F., Jayachandran, P.K., Ozcan, P. A. (2017). Statistical analysis of the effects of Scrum and Kanban on software development projects. *Robotics and Computer-Integrated Manufacturing*, 43, 59-67.
- [2] Totten, J. (2017). Critical success factors for agile project management in non-software related product development teams. *Dissertations*, 31-78.
- [3] Snee, R. D. (2010). Lean six sigma—getting better all the time. *International Journal of Lean Six Sigma*. 1, 9-29.
- [4] Gijo, E.V., Antony, J. (2014) Reducing patient waiting time in outpatient department using lean six sigma methodology. *Quality and Reliability Engineering International*, 30(8), 1481-1491.
- [5] Fontela, E., Gobus, A. (1976). The DEMATEL observer. Battelle Geneva Research Center.
- [6] Tzeng, G.-H., Chen, W.-H., Yu, R., Shih, M.-L. (2010). Fuzzy decision maps: a generalization of the DEMATEL methods. *Soft Computing*, 14, pp. 1141-1150.
- [7] Yang, J. L., Tzeng, G.-H. (2011). An integrated MCDM technique combined with DEMATEL for a novel cluster-weighted with ANP method. *Expert Systems with Applications*, 38, pp. 1417- 1424.
- [8] Hsu, C.-H., Wang, F.-K., Tzeng, G.-H. (2012). The best vendor selection for conducting the recycled material based on a hybrid MCDM model combining DANP with VIKOR. *Resources, Conservation and Recycling*, 66, pp. 95-111.

# A Decision Aid for Success Evaluation in Accreditation Processes of the Universities

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## Abstract

The Accreditation Board for Engineering and Technology (ABET) offers the accreditation of the tertiary education programs in the fields of applied and natural science, computing, engineering, and technology. Though ABET accreditation is voluntary, graduates of the ABET-accredited programs are considered as equivalent in knowledge, behaviors, and attitude with global standards. In this study, the criteria that influence the success of ABET process are evaluated, and their importance weights are determined. The application is illustrated through a case study, which is conducted in a university located in Turkey.

**Keywords:** ABET process, accreditation, education, success evaluation, DEMATEL

## 1. INTRODUCTION

Engineering education has historically undergone many stages of evolution, regulation, and quality control via accreditation. To assure similarity and quality in the study programs, accreditation of engineering and computing education through some global benchmarks has become crucial. In addition to their individual national accreditation bodies, the universities in the Gulf Cooperative Council (GCC) region are gradually acquiring Accreditation Board for Engineering and Technology (ABET) accreditation for their engineering and computing programs. A member of the International Engineering Alliance, ABET is one of the initial signatory organizations from the United States for the Washington Accord. At the associate, bachelor's, and master's degree levels, ABET accredits college and university programs in the fields of applied and natural science, computing, engineering, and engineering technology [1]. The ABET Accreditation procedure has been extremely systematic and regulated. It has aided in comparing various engineering and computing programs to international standards and addressing any deficiencies.

This work introduces Decision Making Trial and Evaluation Laboratory (DEMATEL) technique to determine the the importance degrees of success factors of ABET process. The presence of interrelationships among evaluation criteria leads to utilize DEMATEL methodology as an appropriate tool.

The remaining sections of the paper are organized as follows. Section 2 explains briefly DEMATEL methodology. The following section illustrates the application via a case study conducted in a university. Final section delineates conclusions and future research directions.

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## 2. DEMATEL TECHNIQUE

The DEMATEL methodology developed by the Science and Human Affairs Program of the Battelle Memorial Institute of Geneva between 1972 and 1976 [2,3]. Based on the graph theory, the DEMATEL method can divide multiple factors into a cause-effect group, and it enables the decision maker to visualize influences between criteria with a network relationship map [4].

The method begins by generating the initial direct influence matrix  $A$ . The elements  $a_{ij}$  of the matrix  $A$  represent the direct influence of each factor  $i$  exerts on each factor  $j$ , evaluated by a decision maker. The matrix  $A$  is normalized by using (1) and it is named as the matrix  $D$  [5].

$$D = s.A, \quad (1)$$

where

$$s = \min \left[ \frac{1}{\max_{1 \leq i \leq n} \sum_{j=1}^n |a_{ij}|}, \frac{1}{\max_{1 \leq i \leq n} \sum_{i=1}^n |a_{ij}|} \right] \quad (2)$$

The total relation matrix  $T$  is defined as  $T = D(I - D)^{-1}$  where  $I$  is the identity matrix. Define  $r$  and  $c$  be  $n \times 1$  and  $1 \times n$  vectors representing the sum of rows and sum of columns of the total relation matrix  $T$ , respectively. Suppose  $r_i$  be the sum of  $i^{\text{th}}$  row in matrix  $T$ , then  $r_i$  shows both direct and indirect effects given by factor  $i$  to the other factors. If  $c_j$  denotes the sum of  $j^{\text{th}}$  column in matrix  $T$ , then  $c_j$  shows both direct and indirect effects by factor  $j$  from the other factors [4].

When solving a decision-making problem, the use of DEMATEL method enables also the decision maker to obtain the importance weights of the criteria, in addition to its ability to visualize the interactions between them.

The degree of importance for a factor  $i$  is considered as equals to the sum  $(r_i + c_j)$  when  $j = i$ . A network relationship map which explains the structural relations among factors can be obtained by setting up a threshold value which is determined by the decision makers. Additionally, the difference  $(r_i - c_j)$  represents the net effect that factor  $i$  contributes to the system. A factor  $i$  is a net causer if  $(r_i - c_j)$  is positive, and when  $(r_i - c_j)$  is negative, factor  $i$  is a net receiver [4].

## 3. CASE STUDY

This work presents a DEMATEL approach for evaluating success factors of ABET process. The case study is conducted in a university located in Turkey through three professors' opinions. Initially, factors that are determined by interviewing the decision makers, are delineated in Table 1.

Table 1: Success factors of ABET process

Label	Criterion
C <sub>1</sub>	Performance management of students
C <sub>2</sub>	Program objectives
C <sub>3</sub>	Continuous quality improvement
C <sub>4</sub>	Leading skills of the management
C <sub>5</sub>	Documenting skills

The experts provide their opinions by reaching a consensus and they used the linguistic scale shown in Table 2.

Table 2: Linguistic Scale

No influence	0
Very low influence	1
Low influence	2
High influence	3



The obtained initial direct influence matrix is shown in Table 3.

Table 3. Initial direct influence matrix

	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>
C <sub>1</sub>	0	0	4	0	0
C <sub>2</sub>	4	0	2	0	0
C <sub>3</sub>	0	3	0	3	0
C <sub>4</sub>	2	0	0	0	2
C <sub>5</sub>	0	1	0	0	0

The weights of factors are calculated as in Table 4.

Table 4: Importance weights

Label	Criterion	Weight
C <sub>1</sub>	Student management	0.238
C <sub>2</sub>	Program vision, mission and objectives	0.245
C <sub>3</sub>	Continuous quality improvement	0.289
C <sub>4</sub>	Quality steering team and leader	0.159
C <sub>5</sub>	Document orientation and knowledge sharing culture	0.069

#### 4. CONCLUSIONS

To obtain the importance weights of success factors of ABET accreditation framework, evaluation criteria are determined through expert opinions and then algorithm of the work is reported by considering DEMATEL technique. Importance weights of criteria are assigned by applying DEMATEL methodology, continuous quality improvement and program objectives are the most important success factors however documenting skills is the least important factor. Future research will focus on proposing group decision making approaches for this evaluation.

#### Acknowledgements

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#### References

- [1] Ahmad, N., Qahmash, A. (2020). Implementing Fuzzy AHP and FUCOM to evaluate critical success factors for sustained academic quality assurance and ABET accreditation. *Plos One*, 15(9), 0239140.
- [2] Fontela, E., Gobus, A. (1976). The DEMATEL observer. Battelle Geneva Research Center.
- [3] Tzeng, G.-H., Chen, W.-H., Yu, R., Shih, M.-L. (2010). Fuzzy decision maps: a generalization of the DEMATEL methods. *Soft Computing*, 14, pp. 1141-1150.
- [4] Yang, J. L., Tzeng, G.-H. (2011). An integrated MCDM technique combined with DEMATEL for a novel cluster-weighted with ANP method. *Expert Systems with Applications*, 38, pp. 1417- 1424.
- [5] Hsu, C.-H., Wang, F.-K., Tzeng, G.-H. (2012). The best vendor selection for conducting the recycled material based on a hybrid MCDM model combining DANP with VIKOR. *Resources, Conservation and Recycling*, 66, pp. 95-111.

# Analysis of Voltage Asymmetry in Mechatronic Systems: Modeling and Experimental Validation

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## Abstract

Voltage asymmetry is a fault scenario in which a three-phase load loses power on one phase. Power supply from only two phases out of the required three poses a significant risk in all mechatronic systems. Detecting such a fault is challenging, and if left undetected, it can lead to overheating of drive motors and subsequent mechatronic system failure. This paper addresses the issue of asymmetric power supply and its consequences. A mathematical model is developed to estimate the induced voltage at the terminal affected by the fault. The results of the mathematical analysis are presented and experimentally validated on dedicated test equipment implemented for this research.

**Keywords:** Voltage asymmetry, Mechatronic systems, Fault Detection, Mathematical Modeling

## 1. INTRODUCTION

In a three-phase system, voltage asymmetry is the case where the amplitudes of the phase or line voltages and/or the phase angles are mutually different. There are several definitions of voltage asymmetry originating from different sources [1]:

- National Equipment Manufacturer's Association-NEMA. The definition of voltage asymmetry, as defined by this association, is also called LVUR (line voltage unbalance rate) and is given by:

$$LVUR[\%] = \frac{\text{maximum deviation of the voltage from the average value of the line voltage}}{\text{the average value of the line voltage}} \cdot 100. \quad (1)$$

In (1) it is assumed that the average voltage value is always equal to the nominal voltage value (e.g. in the USA the nominal value is 480 V). As we can see in the equation, only the data on the amplitudes exist, while the information on the phase angles is not considered.

- Institute of Electrical and Electronics Motorers-IEEE. According to IEEE standard 112 from 1991, the definition of voltage asymmetry, which is also called PVUR (phase voltage unbalance rate), is given by:

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$$PVUR[\%] = \frac{\text{maximum voltage deviation from the average value of the phase voltage}}{\text{the average value of the phase voltage}} \cdot 100. \tag{2}$$

Note that definitions (1) and (2) are the same with the difference that the IEEE standard uses phase rather than line voltages. Phase angles are not considered in this definition either.

Actual definition

The actual definition of voltage asymmetry is defined as the ratio of the inverse and direct components of the voltage. The voltage unbalance factor (VUF), or actual definition, in percentage is given by:

$$VUF[\%] = \frac{\text{inverse components of the voltage}}{\text{direct components of the voltage}} \cdot 100. \tag{3}$$

The direct and inverse voltage components can be used when analyzing the voltage asymmetry in the supply of asynchronous motors. The actual definition considers both the amplitudes and phase angles of the voltages. When calculating component system voltages, i.e. voltage asymmetry, complex quantities are used. In order to avoid working with complex numbers, formula (4) is introduced, which approximates (3) very well:

$$\text{voltage asymmetry}[\%] = \frac{82 \cdot \sqrt{V_{abe}^2 + V_{bce}^2 + V_{cae}^2}}{\text{the average value of the line voltage}} \tag{4}$$

where  $V_{abe}$  is the difference between the line voltage  $V_{ab}$  and the average value of the line voltage, etc.

Operation of an asynchronous motor in conditions of voltage asymmetry is harmful to its proper functioning and affects the operation life of the motor. The consequence of voltage asymmetry is current asymmetry, which causes overheating of stator windings and rotor bars. These phenomena result in a shortening of the operation life of the insulation and an increase in energy consumption due to an increase in losses.

There are rare cases when there is no asymmetry in the mains voltage. According to the American standard ANSI C84.1 -1995 (Electrical Power Systems and Equipment — Voltage Ratings (60 Hz)), only 66% of the power of three-phase electricity supplied to industry is below 1% of voltage imbalance [2, 3].

Voltage asymmetry is usually very difficult to detect. Its limiting case is a complete interruption of one phase voltage. NEMA in its specification MG1 14:35 states that the load on motors must be reduced when a voltage asymmetry of values above 1% is detected, and motor shutdown is suggested for values above 5%. The voltage asymmetry measured on the motor during the interruption of one phase voltage has a value of up to 9%. The reason for this is the induced voltage in the coil that was left without power from the network. The percentage value by which it is necessary to reduce the load on the motor, so that the motor could safely continue working, depending on the voltage imbalance, is shown in Table 1.

Table 1. Required motor load reduction depending on the voltage asymmetry value [4]

Value in percentage of voltage asymmetry	Reduced load - percentage value of the nominal value
1%	98%
2%	95%
3%	88%
4%	82%
5%	75%

Voltage asymmetry causes 6 to 10 times greater current asymmetry. Current imbalance causes the motor to overheat. If the effective value of the voltage is also low and/or the motor is slightly overloaded, the temperature rise in the motor is drastic. In the phase with the largest imbalance, the percentage increase in temperature is approximately equal to twice the squared percentage value of the voltage imbalance. For example, if the voltage imbalance is 5%, the temperature rise is equal to  $2 \cdot 5^2$ , that is 50%. The increase in temperature depending on the value of the voltage imbalance is shown graphically in Fig. 1 [5,6].

The authors of the Electric Motor Manual in 1987 analyzed 9000 failures of electric motors. All failures were classified and divided into seven groups, namely: overloads, work on one phase, age, bearing failures, rotor failures, pollutants and other failures [7]. Representation of individual failures, in the total number observed, expressed as a

percentage: overloads 30%, pollutants 19%, phase interruption 14%, bearing failures 13%, age 10%, rotor failures 5% and other failures 9%. From this data, we see that in 44% of cases the motor failure is related to overheating. If the motor is running at just 10°C higher than the nominal temperature, its life will be shortened by 50%. An increase of another 10°C reduces the life of the motor by another 50%. This proportion is also called the "half-life" rule. Although the lifetime of the motor is not defined, it is considered to be around 20 years under nominal operating conditions [1].

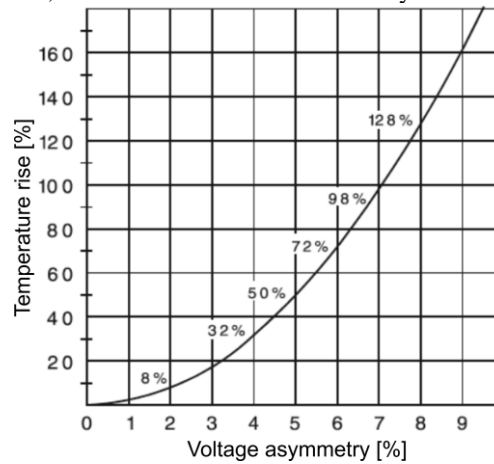


Fig. 1. Graphic representation of the relationship between temperature rise and the level of voltage asymmetry [5]

The effect of voltage asymmetry on the lifetime of motor insulation is shown in Table 2. The data refer to a motor whose insulation class is B, at nominal load and an ambient temperature of 40°C.

Table 2. Lifetime of motor insulation depending on the value of voltage asymmetry and service factor [1]

Value of voltage asymmetry	Service factor 1.0	Service factor 1.15
0%	1.00	2.27
1%	0.90	2.10
2%	0.64	1.58
3%	---	0.98
4%	---	0.51

Table 2 mentions some expressions that need to be explained. The term "service factor" represents a value that, when multiplied by the nominal power of the motor, gives the value of the load with which it is allowed to overload the motor. For a 10 kW motor whose service factor is 1.15, it is valid that the motor can be loaded with a load of 11.5 kW, without additional heating occurring that would endanger the motor. From Table 2, we see that a motor with a service factor of 1.15 has a higher temperature endurance than a motor with a lower service factor. Older motors, thanks to their construction, have a greater ability to release heat, so they can withstand overload for a longer period of time than newer generation motors. The insulation class gives us information about the maximum operating temperature of the motor. Accordingly, we distinguish: class A 105°C, class B 130°C, class F 155°C and class H 180°C.

Figure 2 shows a graphical representation of the dependence of the life of the insulation, depending on the voltage asymmetry for different classes of insulation and service factors.

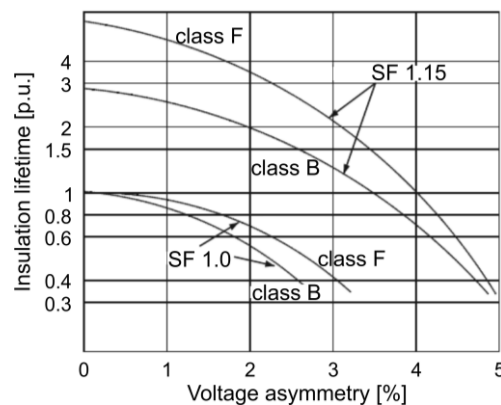


Fig. 2. Graphic representation of the relationship between the insulation lifetime and the level of voltage asymmetry [5]

With voltage asymmetry, the efficiency of the motor also decreases because, as we have already mentioned, due to the increase in the current through the coils, the losses also increase, so a greater part of the energy is converted into heat, and not into active power. Table 3 presents the results obtained from laboratory tests, published in [6].

Table 3. Motor efficiency [%] depending on the voltage asymmetry and load [6]

Load compared to nominal	Voltage asymmetry		
	0%	1%	2,5%
100%	94.4	94.4	93.0
75%	95.2	95.1	93.9
50%	96.1	95.5	94.1

How much the value of the motor efficiency will weaken depends on the design, speed, nominal degree of motor efficiency and nominal power.

In [2] there is a table in which the influence of voltage asymmetry on motor performance is quantitatively shown in accordance with everything we have presented so far (Table 4).

Table 4. Effect of the voltage asymmetry on the motor performance [2]

Voltage asymmetry	Coil temperature	Losses I <sup>2</sup> R (% of rated power)	Decrease of motor efficiency	Expected lifetime
0%	120°C	30%	---	20 years
1%	130°C	33%	up to 0.5%	10 years
2%	140°C	35%	1-2%	5 years
3%	150°C	38%	2-3%	2.5 years
4%	160°C	40%	3-4%	1.25 years
5%	180°C	45%	5% and more	>1 year

Based on the given analysis, we can conclude that the problem of voltage asymmetry is extremely significant because its consequences are multiple harmful. The topic itself has been known for a long time [8], but a definitive solution has not yet been found [9]. How the asymmetry of the voltage to which the asynchronous motor is connected affects the operation and performance of the motor is known, but not in detail [10]. The results presented in this chapter are only sufficient to indicate that the problem exists, that it is significant and that high-quality motor protection from asymmetric power supply is necessary. When we start with the analysis down to the finest details that we need, in order to be able to provide solutions for relay protection, then we encounter a lack of information and concrete data in the literature.

Therefore, in order to be able to respond to the task and propose technical solutions that would represent a good protection of the motor against asymmetric power supply, we must get to know the problem of voltage asymmetry

well. When we say asymmetric power supply, then we primarily focus on its extreme case, which is also the most harmful for the motor, which is the complete disconnection of one phase voltage. A voltage is induced in the winding of the motor that was left without a phase supply due to the rotation of the rotor. This induced voltage can be measured at the terminal of the lost phase. Therefore, all three phase voltages are detected at the motor terminals, but of different values, that is, voltage asymmetry [11, 12].

There is not much information in the literature about the value of the induced voltage at the motor terminal that is interrupted. What is known is that the value of that voltage is high, without concrete values [13]. It is also a big unknown what the value of the induced voltage depends on and whether it is possible to calculate or estimate its value. These data would be of great importance for the implementation of motor protection in mechatronic systems.

This paper presents an analysis whose goal is to identify and explain the occurrence of asymmetry in the power supply voltage of an induction motor caused by the interruption of one phase voltage. The idea is to find a way to determine the value of the induced voltage at the motor terminal. Initially, a simpler mathematical model was used, which is sufficient for making qualitative conclusions. Basic dependencies and certain basic quantities that influence the value of the induced voltage have been established. The main task was to determine how the load on the motor shaft affects the induced voltage. The conclusions, which were made in this regard on the basis of mathematical relations, were confirmed by laboratory tests. After the qualitative analysis, a procedure was started which had the task of arriving at specific values of the induced voltage. For this purpose, a more complex mathematical model was used. Verification of the obtained results was also carried out by experiments. Finally, an analysis of the current flows in the motor after the phase voltage interruption was performed.

## 2. DESCRIPTION OF THE EXPERIMENTAL SETUP

In order to confirm the conclusions drawn from the previous chapter, we performed experimental measurements. For the experiments we need a motor with a variable load connected. It is necessary to provide the possibility to switch off one phase voltage at the desired moment so that the induced voltage can be measured at the corresponding motor terminal.

We can extend the experiment designed in this way to reach another important conclusion at the same time. From the point of view of the relay protection that we want to implement by voltage measurement, it is of crucial importance to know whether the induced voltage at the motor terminals is the same at each terminal, or whether their values are different depending on which phase the interruption occurred. Three-phase asynchronous motors by definition should have three identical stator windings connected to three phase voltages of equal amplitude. Therefore, it is logical to expect that the induced voltage does not depend on which of the three phases the interruption occurred. In order to verify this thesis, on the motor we will use, we will switch off not only one phase, but all three, and measure the voltages at the terminals.

The motor used in the experiment is an integral part of the laboratory apparatus for testing hydraulic systems (Fig. 3). The motor drives the high-pressure hydraulic pump. The load on the motor shaft can be changed by the reduction valve from a fully open position, which is very close to motor idle, to a fully closed position when the motor load is maximum, and the flow of hydraulic oil is provided by a safety valve that prevents overloading of the hydraulic installation by limiting the maximum pressure in the system.

With the valve fully open, the motor is not idling because there is a load when the fluid passes through the hydraulic system. With the valve fully closed, the motor current does not reach the nominal value because the motor is oversized for the connected pump. At nominal motor power, the pressure in the system would be too high, which would endanger parts of the hydraulic installation. Regardless of the fact that measurements cannot be made in these two extreme cases, the obtained results, which were obtained for the load range from 20 bar to 100 bar, can clearly show the trend of the dependence of the induced voltage on the motor load in case of one phase voltage failure.

The drive motor data is as follows: Manufacturer: MOLL-MOTOR; Type: 1AT 90L-4; Rated power: 1,5 kW; Connection and rated voltage: Y, 400 V; Nominal current: 3,61 A;  $\cos\varphi$ : 0,79; Nominal speed: 1390<sup>o</sup>/min.

The ambient temperature during the measurement was 19°C. After the measurement was completed, the temperature on the surface of the motor was 28°C, and the winding temperature was 32°C.



Fig. 3. The laboratory experimental setup for experiments under variable load

### 3. APPROACH TO PROTECTION AGAINST ASYMMETRIC POWER SUPPLY IN MECHATRONIC SYSTEMS

The subject of our interest in this paper is the protection of three-phase asynchronous motors from asymmetric power supply, or in other words, protection from the loss of one phase voltage. From the name itself, the natural conclusion is that the protection function can be realized by measuring the voltage at the motor connections.

In that case, protection could be realized in the following way. We can connect undervoltage relays to the motor terminals. Connection is possible in two ways. It is possible to monitor the phase voltages, in which case it is necessary to connect three undervoltage relays between the phase connections and the neutral conductor. Three relays are needed because we are interested in monitoring all three voltages.

This is exactly why the second approach is better. Instead of phase voltages, we monitor line voltages. Monitoring of all three phase voltages is achieved with two undervoltage relays connected between phases. If there is a loss of any phase voltage, one of the line voltages will assume a zero value and the corresponding relay will react [14].

This approach to the realization of three-phase load protection against supply voltage asymmetry is very simple and can be practically performed using standard undervoltage relays, which can be easily found on sale at relatively affordable prices. There's just one problem. This type of protection can only be implemented with loads of a purely resistive nature, such as, for example, heaters. Given that heaters by their nature are not threatened by asymmetric power supply (the most that can happen is that the developed heat is less than nominal), this type of protection is not very useful.

#### 3.1. Why is the use of undervoltage relays not completely adequate for the protection of asynchronous motors?

The voltage at the terminal of the motor on which the phase interruption occurred is not zero. There is a voltage on the faulty connection immediately after the supply line is interrupted, and it is generated in the motor. Its value is different and depends on the type of motor. The range in which the value of the induced voltage is found is problematically wide. The highest values can be in the area where the nominal supply voltage ranges. Therefore, the setting of undervoltage relays is difficult and their use can cause problems in the form of false fault detections and unnecessary drive shutdowns.

The other side of the problem is the value to which the undervoltage relays need to be set. How to determine what will be the value of the induced voltage of a certain motor when a fault occurs and adjust the undervoltage relay accordingly?

We will try to answer this question in the next chapter. Based on the results of measurements, theoretical analysis and mathematical modeling of the problem and its experimental verification, we will confirm the previously stated claims.

#### 4. MATHEMATICAL MODELING AND ANALYSIS

From the point of view of relay protection, the most critical and unfavorable case that can occur is the loss of one phase supply voltage. Of course, the protection must be set to the value<sup>1</sup> of the induced voltage that is the highest possible for the given motor. Therefore, it is important to determine under which operating conditions the induced voltage has the highest value.

We will try to derive the conclusion analytically. In balanced three-phase circuits, the analysis is simple because it is reduced to the analysis of single-phase circuits. Therefore, by modifying the initial equations, the analysis of unbalanced three-phase circuits is reduced to the analysis of balanced ones. There are several such procedures<sup>2</sup> in which the initial voltage (current) phasors are decomposed into components, the most used of which is the method of symmetrical components. Fortescue<sup>3</sup> showed that each of the phasors of a three-phase system can be decomposed into three components that, individually, form a single-phase (zero), direct and inverse system [15].

In [16], the method of calculating the change in the number of revolutions of the shaft, the change in the current strength in the lines that are not in fault, as well as the motor torque and slip in case of one phase voltage failure is described. The calculation was made on the basis of the equivalent scheme of the asynchronous motor with consideration of the inverse system.

The equivalent diagram of an induction motor is, as always, single-phase and direct sequence quantities can be calculated from it when the system is balanced. In the case of a phase break, we must additionally analyze the equivalent scheme that corresponds to the inverse order. Structurally, both schemes are the same (Fig. 4 and 5), the difference is only in the slip value. In the case of a direct system (Fig. 4), slip is common for the motor mode of operation:

$$s = \frac{n_s - n}{n_s}, \tag{5}$$

where  $n_s$  is the synchronous speed and  $n$  is the mechanical speed of rotation of the shaft. In the case of inverse order, the slip is  $2-s$ . Physically, this corresponds to the case when the motor is connected to a direct voltage sequence, and its rotor, using an external force, rotates at nominal speed in the opposite direction.

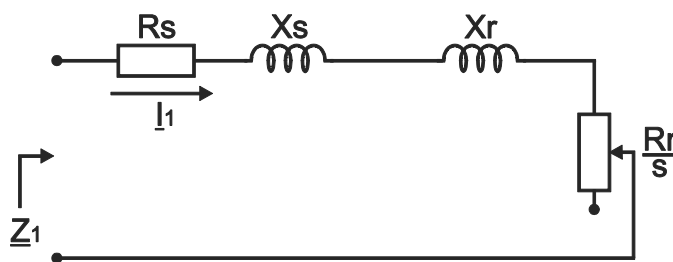


Fig. 4. Equivalent diagram of asynchronous motor for direct sequence

In the schemes from Fig. 4 and 5, the rotor sizes are reduced to the stator and the magnetization branch is omitted. Designations for symmetrical components in accordance with valid IEC recommendations are: 1 for direct, 2 for inverse and 0 for zero component [15].

<sup>1</sup> The undervoltage relay will not be set exactly to the value of the expected induced voltage, but to a slightly higher value. That value cannot be much higher than expected, because in that case it is possible to enter the area of voltage values that are close to the nominal value. In that case, the relays would react even when there was no failure, but when it was only a short-term drop in the network voltage.

<sup>2</sup> In addition to symmetrical components, three-phase systems can be divided into other components derived from symmetrical components: "Edith-Clarke" components, "Koga" components, "Concordia" components, etc. [15].

<sup>3</sup> Dr. C.L. Fortescue formulated and published a paper on symmetrical components in 1918, and only in the late 20s and early 30s was the method of symmetrical components applied in failure analysis [17].



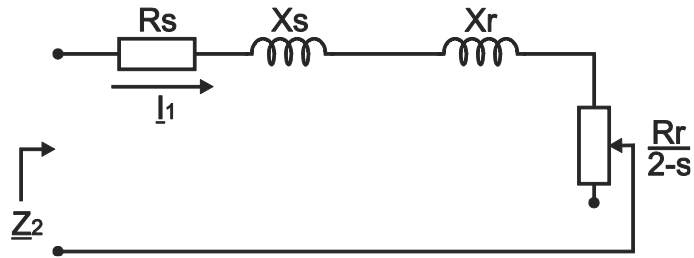


Fig. 5. Equivalent diagram of asynchronous motor for inverse sequence

The relationship between three-phase voltages and voltages of zero, inverse and direct sequence is given in matrix form:

$$\begin{bmatrix} \underline{U}_a \\ \underline{U}_b \\ \underline{U}_c \end{bmatrix} = \begin{bmatrix} 1 & 1 & 1 \\ 1 & a^2 & a \\ 1 & a & a^2 \end{bmatrix} \cdot \begin{bmatrix} \underline{U}_0 \\ \underline{U}_1 \\ \underline{U}_2 \end{bmatrix} \tag{6}$$

If we were to write the matrix equation (6) for the currents, then we would see that we can write for the current of phase *a* as follows:

$$\underline{I}_a = \underline{I}_0 + \underline{I}_1 + \underline{I}_2 = 0 \tag{7}$$

At this point, it should be considered whether in the event of a phase failure at the asynchronous motor terminals, there is a zero-voltage component. In other words, can the asymmetry be represented only with a direct and an inverse component.

Zero current components, if they occur, have the same phase position in all winding phases. Therefore, in the case of asymmetry, it should first be established whether the given coupling of the stator windings enables the flow of zero current components. With the asymmetry in the connection of stars, without a zero derivative, zero currents cannot exist through the zero point [18]. In practice, with an asynchronous motor in star connection, the neutral terminal is not connected, so the calculation should be carried out without the zero system.

Zero currents cannot appear even in a delta connection, if the power drive system is balanced [18]. In this paper, we analyze the cases of asymmetry caused by the interruption of a phase outside the motor, in the power supply installation, and even in the case of a delta connection, we will not analyze zero currents in the calculation.

It should be kept in mind that everything that has been said refers to the existence of a zero-current component, but the same analysis is valid for zero voltage because the component currents in the symmetrical part of the network cause corresponding voltage drops (zero currents cause zero voltages, etc.) [17].

Characteristic asymmetric couplings, without and with zero system, are shown in Fig. 6 and 7, respectively [18].

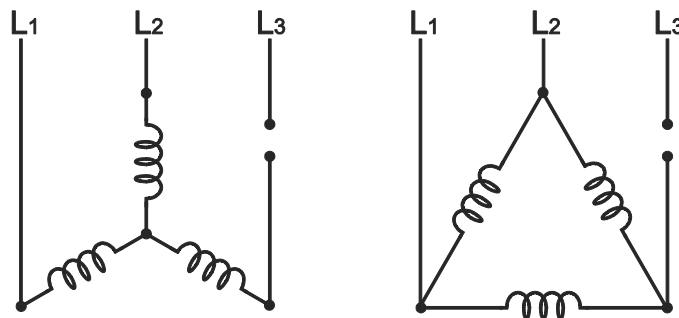


Fig. 6. Asymmetric connections without zero components

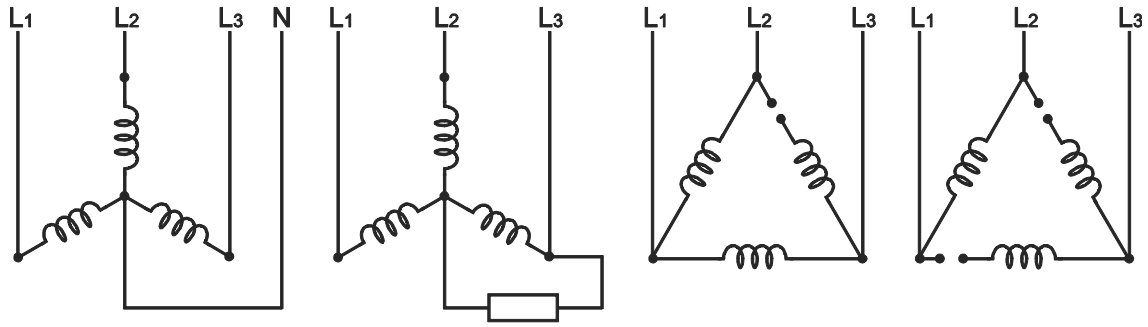


Fig 7. Asymmetric connections with zero components

Based on the conclusion from (7) it follows:

$$\underline{I}_a = \underline{I}_1 + \underline{I}_2 = 0 \Rightarrow \underline{I}_1 = -\underline{I}_2, \quad (8)$$

and based on (6):

$$\underline{U}_a = \underline{U}_1 + \underline{U}_2, \quad (9)$$

$$\underline{U}_b = a^2 \underline{U}_1 + a \underline{U}_2, \quad (10)$$

$$\underline{U}_c = a \underline{U}_1 + a^2 \underline{U}_2. \quad (11)$$

Let's include in equations (9), (10) and (11) the expressions for the direct and inverse component of the voltage expressed through the direct and inverse component impedance:

$$\underline{U}_a = \underline{I}_1 \underline{Z}_1 + \underline{I}_2 \underline{Z}_2, \quad (12)$$

$$\underline{U}_{bc} = \underline{U}_b - \underline{U}_c = (a^2 - a) \underline{I}_1 \underline{Z}_1 + (a - a^2) \underline{I}_2 \underline{Z}_2. \quad (13)$$

Respecting (8) we get:

$$\underline{U}_a = \underline{I}_1 (\underline{Z}_1 - \underline{Z}_2), \quad (14)$$

$$\underline{U}_{bc} = (a^2 - a) (\underline{Z}_1 + \underline{Z}_2) \underline{I}_1. \quad (15)$$

Now we can write from (15) the expression for the inverse component of the current, which we include in (14) and finally we get the expression for the voltage of phase *a* which is faulty as a function of the direct and inverse impedance of the motor and the line voltage of the healthy phases:

$$\underline{U}_a = \frac{\underline{U}_{bc}}{(a^2 - a)} \frac{(\underline{Z}_1 - \underline{Z}_2)}{(\underline{Z}_1 + \underline{Z}_2)}. \quad (16)$$

Equivalent impedances for direct and inverse sequence are determined from the equivalent schemes given in Fig. 4 and 5. All elements are connected in series, so the equivalent impedance is the sum of resistance and reactance values. In (16) the sum and subtract of impedances of direct and inverse order exist and they are calculated as:

$$\underline{Z}_1 + \underline{Z}_2 = 2 \left[ R_s + \frac{R_r}{s(2-s)} + j(X_s + X_r) \right], \quad (17)$$

$$\underline{Z}_1 - \underline{Z}_2 = 2R_r \frac{(1-s)}{s(2-s)}. \quad (18)$$

When we include equations (17) and (18) in (16) with the note that:

$$a^2 - a = -j\sqrt{3}, \tag{19}$$

we obtain a final expression for the induced voltage of the phase in the fault which can be written in the following general form:

$$\underline{U}_a = \frac{U_{bc}}{\sqrt{3}} \frac{(1-s)}{s(2-s)} \frac{R_r}{(A^2 + B^2)} (B + jA), \tag{20}$$

where are:

$$A = R_s + \frac{R_r}{s(2-s)} \quad \text{and} \quad B = X_s + X_r. \tag{21}$$

The voltage  $\underline{U}_a$  is obtained in complex form. Its effective value is obtained by calculating its modulus, and the voltage  $\underline{U}_{bc}$  can be included with the phase angle 0.

From the obtained equation (20), we can qualitatively determine the dependence of the induced voltage on the motor terminal of the faulty phase. Motor slip exists in the equation. It can be seen that the voltage  $\underline{U}_a$  is inversely proportional to the slip. Slip depends, among other things, on the load. This leads us to the conclusion that the induced voltage will have the highest possible value if the phase interruption occurs during the period when the motor is idling.

We are interested in the highest possible value of the induced voltage, because the undervoltage relays must be set according to it. If the protection works adequately for failures that occur at idle, then it will certainly work when the motor is loaded, when a lower value of the induced voltage is expected. In short, the most critical case for protection against asymmetric power supply, which would be based on measuring the voltage at the motor terminals, is idling the motor.

Quantitatively, (20) is not completely suitable for estimating the inductive voltage because it does not provide sufficient accuracy, which will be discussed more later.

## 5. EXPERIMENTAL RESULTS AND VALIDATION

The results of experiments designed to confirm or refute the derived mathematical model are presented in tables. All voltage and current values in Tables 5 and 6 represent effective values and are expressed in [V] and [A], respectively. The phase that is switched off and on whose connection the measurement was performed, is marked with a capital letter, e.g. *aBc* or if all phases are present *abc*.

Table 5. The results of measuring the induced voltage at the maximum and minimum values of the load at the interruption of phase C

		V <sub>a</sub>	V <sub>b</sub>	V <sub>c</sub>	V <sub>ab</sub>	V <sub>ac</sub>	V <sub>bc</sub>	I <sub>a</sub>	I <sub>b</sub>	I <sub>c</sub>
20 bar	abc	230	229	234	397	400,9	399,3	2,03	2,11	2,35
	abC	229,8	229	<b>165,5</b>	392	342	332	3,28	3,38	0
100 bar	abc	226,6	225,8	229,5	391,5	394,2	394	2,66	2,78	2,87
	abC	226,6	225,8	<b>130</b>	391	291,5	327,5	5,31	5,3	0

Based on the measurement results, presented in Table 5, we can confirm the conclusion derived from (20). The induced voltage at the de-energized motor terminal depends on the load. The lower the load at the moment of phase loss, the higher the induced voltage and vice versa.

The bolded results in Table 5 represent the voltages that were measured at the motor connection in two different load cases and the result unequivocally confirms the stated statement. Therefore, all our subsequent considerations can be focused on idling the motor as a working mode which, from the aspect of protection, is interesting to us, as we have already explained.

We mentioned that when performing the measurements, we will perform measurements on all three phases under the same conditions, in order to experimentally confirm our expectation that the value of the induced voltage does not depend on which of the phase conductors the break occurred.

Table 6 shows those results and in the shaded fields the highlighted voltage values at the connections of phases a, b and c which were switched off. As you can see, the value of the induced voltage is the same on all connections, so this assumption is also confirmed. In the following considerations, there will be no need to analyze or monitor phenomena on multiple connections. It is enough that measurements are made on one terminal and that it applies to all. This is also a facilitating circumstance for the protection that would be realized by undervoltage relays because all relays should be set to the same undervoltage value.

Table 6. Measurement results of the induced voltage at the minimum value of the load for interruptions of each of the phases

		V <sub>a</sub>	V <sub>b</sub>	V <sub>c</sub>	V <sub>ab</sub>	V <sub>ac</sub>	V <sub>bc</sub>	I <sub>a</sub>	I <sub>b</sub>	I <sub>c</sub>
20 bar	Abc	<b>164,5</b>	229	234	345,6	336,6	399,1	0	3,34	3,38
	aBc	230	<b>165</b>	233,8	336,5	400,5	347,4	3,08	0	3,29
	abC	229,8	229	<b>165,5</b>	392	342	332	3,28	3,38	0

During the measurement, the line voltages and currents of all phases were measured. In tables 5 and 6 those results were also presented. Line voltages do not provide any additional information that could qualify them as criteria for registering a fault. Unlike phase voltages, line voltages have a change in two voltages, not one voltage.

From the results of current measurements, we can confirm what is generally known. The current in the faulty phase conductor is equal to zero. In the remaining two, the current increases in relation to the value that was before the occurrence of the fault. The increase in the value of the current in the phases that supply the motor in failure ranges from 60% for an unloaded motor to 100% in the case of a loaded motor compared to the value that was before the failure. At a load of 100 bar, which is less than the nominal value, the value of the current reaches (Table 6) 5.3 A, which is 70% higher than the nominal current value (3.61 A).

This is why protection against asymmetric power supply is necessary. High current values through the motor windings cause them to overheat. Due to overheating, the insulation of the coil is damaged and a short circuit occurs inside the coil and/or to the motor housing.

## 6. CONCLUSION

After everything presented in this paper, we can make the following conclusions.

It has been shown that the voltage asymmetry caused by the loss of one phase voltage is an extremely difficult fault to detect. Relay protection, which is intended to protect the motor from asymmetry, very often has a false response or a complete lack of response in the event of a fault.

It is shown that the induced voltage at the motor terminal without phase voltage is directly dependent on the load. In fact, the real reason for this dependence is the slip value, that is, the speed of rotation of the rotor. At low loads, the induced voltage has a higher value because the slip is then greater. The mathematical model derived from equivalent motor schemes for direct and inverse order clearly indicated the described dependence.

The conclusions derived from the derived mathematical model were confirmed by experiments on a motor where it was possible to vary the load in a wide range.

Based on the derived and confirmed dependence of induced voltage and load, the conclusion was imposed that all future measurements and analyzes should refer to the motor idle mode. When the motor is idling, the induced voltage has the highest possible value, and from the point of view of relay protection, idling is the most critical case. If the relay protection manages to correctly detect a fault that occurred during idling, then it will surely be able to detect faults that occur in any other operating mode.

## References

- [1] P. Pillay, M. Manyage, "Definitions of Voltage Unbalance", IEEE Power Motorereng Review, May 2001.
- [2] Eliminate Unbalanced Voltages - Take Action, Quality Energy, <http://www.quality-energy.com/PDF/MotorUnbalancedVoltages.pdf>.
- [3] M Y Stoychitch and B Z Knezevic "Design of remote electro-pneumatic control system using microcontroller," 2019 IOP Conf. Ser.: Mater. Sci. Eng. 477 012034, DOI 10.1088/1757-899X/477/1/012034
- [4] SPD Selecting Protective Devices, Based on the 2008 National Electrical Code, Cooper Bussmann, 2009, <http://www.bussmann.com>.

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- [5] Voltage monitor, Application notes and Glossary, ABB Inc., <http://controldesignsupplyinc.com/marketing/ABB%20SSAC%20SS3%20Timers%20&%20Controls%20-%20Section%2013%20-%20Application%20Notes,%20Glossary,%20&%20Warranty.pdf>
- [6] Energy Tips - Motor Systems, Motor Systems Tip Sheet #7, Industrial Technologies Program, Energy Efficiency and Renewable Energy, U.S. Department of Energy Washington, September 2005, <http://www.eere.energy.gov/industry>.
- [7] B. Pelikan, Three-phase Pump and Motor Protection, June 2009, [http://www.nationaldriller.com/copyright/BNP\\_GUID\\_9-5-2006\\_A\\_100](http://www.nationaldriller.com/copyright/BNP_GUID_9-5-2006_A_100).
- [8] G. N. Popa, C. M. Diniş, S. I. Deaconu and I. Popa, "On Currents Asymmetry Protection For Three Phase Low Voltage Induction Motors," 2018 International Conference on Applied and Theoretical Electricity (ICATE), Craiova, Romania, 2018, pp. 1-6, doi: 10.1109/ICATE.2018.8551429.
- [9] P. Toman, M. Paar and J. Orsagova, "Possible Solutions to Problems of Voltage Asymmetry and Localization of Failures in MV Compensated Networks," 2007 IEEE Lausanne Power Tech, Lausanne, Switzerland, 2007, pp. 1758-1763, doi: 10.1109/PCT.2007.4538582.E
- [10] S. V. Oskin, A. S. Makarenko and A. V. Miroshnikov, "Increased Probability of Proper Operation of Filter Protection Devices Against Phase Failure at Voltage Asymmetry in Rural Electrical Networks," 2020 International Ural Conference on Electrical Power Engineering (UralCon), Chelyabinsk, Russia, 2020, pp. 115-120, doi: 10.1109/UralCon49858.2020.9216236.
- [11] A. Khludenev, "Insulation Monitoring Impact on Relay Protection Malfunction," 2020 International Conference on Electrotechnical Complexes and Systems (ICOECS), Ufa, Russia, 2020, pp. 1-4, doi: 10.1109/ICOECS50468.2020.9278485.
- [12] Šekara, T.B., Blanuša, B. & Knežević, B.Z. A new analytical approach for design of current and speed controllers in electrical motor drives. *Electr Eng* 100, 2789–2797 (2018). <https://doi.org/10.1007/s00202-018-0747-z>
- [13] S. V. Oskin, A. S. Makarenko and A. V. Miroshnikov, "Improving the Efficiency of Protection Devices with Zero Sequence Voltage Filters in Rural Electrical Networks," 2020 International Russian Automation Conference (RusAutoCon), Sochi, Russia, 2020, pp. 181-186, doi: 10.1109/RusAutoCon49822.2020.9208221.
- [14] Xiao, Y., Ouyang, J., Xiong, X. et al. Fault protection method of single-phase break for distribution network considering the influence of neutral grounding modes. *Prot Control Mod Power Syst* 5, 10 (2020). <https://doi.org/10.1186/s41601-020-00156-w>
- [15] B. D. Reljin, Analysis of three-phase electrical circuits. second edition, Akademska misao, Beograd, 2005.
- [16] M. Zineb, B. Seddik, Modelling and Control of an Asynchronous Machine. Lap Lambert Academic Publishing, London, 2016.
- [17] Walter A. Elmore, Protective Relaying, Theory and Applications. second edition, Revised and Expanded, Marcel Dekker, Inc., New York, 2004.
- [18] J. Varga, Electric machines with the application of the theory of spatial vectors., Corporaation SEVER, Subotica, 2004.

# Dynamics Leadership of Organizational Influence on Automotive Industry Performance

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## Abstract

The topic focuses on a segment of a research thesis that examines the impact of different Dynamics of Organizational Influence on Automotive Industry Performance. In the paper and presentation will be the focus on leadership styles. In line with J. Radtke's findings in 2021, the automotive industry is facing a significant challenge, characterized by the loss of unique selling points (specifically, engine technology) and intensified global competition. This challenge is akin to the profound transformations seen during the advent of the internal combustion engine. The term "leadership style" refers to recurring and habitual behaviours that exhibit specific patterns. Surveys serve as a conventional tool for collecting data in empirically oriented social and economic sciences. The primary source for inquiries about leadership styles is a study conducted by Pearce and Sims in 2002. This choice is driven by the copyright protection and high licensing fees associated with the Multifactor Leadership Questionnaire (MLQ). For the broader research, a Structural Equation Model was employed to discern the relationships between various variables. The conference presentation will provide a condensed view of the findings from the leadership study. Remarkably, neither Aversive Leadership nor Leadership by Exception were identified within the respondents' organizations. Instead, leaders predominantly employed directive and transactional leadership styles. The overall trends in Transactional Leadership and Aversive Leadership remained inconclusive, with results oscillating between rejection and confirmation. It's noteworthy that two-thirds of all respondents affirmed that their managers set a commendable example for their employees, a core attribute associated with transformational leadership.

**Keywords:** Leadership styles, Quantitative Survey, Automotive Industry

## 1. ACTUALITY AND LITERATURE REVIEW: LEADERSHIP

Consequently, leadership has been an important research topic for several decades. The "Multifactor Leadership Questionnaire" (MLQ) developed by Bass and Avolio (1990) has stimulated a great deal of research in the area. The underlying theory essentially postulates two different types of leadership actions by the superior: transactional and transformational leadership.<sup>1</sup>

Transactional leadership is designed in terms of a rational exchange concept between leaders and those who are led.

As the term "transactional" already makes clear, transactional leadership is about structuring the transactions or the exchange between managers and their employees. It is about clear target agreements, clear regulations and structures, sanctions and control mechanisms that help management achieve its goals with the lowest possible use of resources.<sup>2</sup>

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<sup>1</sup> Cf. Wegge, J., von Rosenstiel, L. (2019). "Führung." In: Schuler, H., Moser, K. (eds.), *Lehrbuch Organisationspsychologie*. Göttingen: Hogrefe, p. 291.

<sup>2</sup> Cf. Kraus, R., Kreitenweis, T. (2020) *Führung messen*, Heidelberg: Springer-Verlag GmbH Deutschland, p. 29.

Transactional leadership is characterised by functional rationality on both sides: It is about achieving a goal with as little effort as possible. If the employees understand and accept the reward system, it offers them orientation and acts as a management substitute that is intended to make further management activities almost superfluous. The manager behaves like a rationally calculating, resource-saving homo economicus. It only intervenes when the achievement of goals is in acute jeopardy.<sup>3</sup>

How the manager should act here can be described in more detail with the path-goal theory of leadership, which is based on motivational psychology. Performance-related rewards for employees and active and passive management according to the exception principle (management by exception) are typical behaviours of a transactional manager.<sup>4</sup> According to the theory of Bass and Avolio, the term "transactional leadership" describes performance-based reward behaviour on the part of the superior. If the employee shows the behaviour that is important to the manager, such as higher commitment, the supervisor offers the employee what is important to him, e.g. verbal recognition or financial rewards.<sup>5</sup>

In concrete terms, transactional management means that the manager assigns tasks to the employees or agrees them with them and rewards the employees for successfully completing these tasks or promises them rewards (e. g. financial incentives or recognition for good work). It also means that the manager actively monitors the fulfilment of tasks by the employees and takes corrective action in the event of deviations from performance standards as well as in the event of deficiencies and errors, or that they passively wait until problems arise and only then intervene.<sup>6</sup> Punitive behaviour in the event of failure to achieve results is not recorded in the MLQ. The transactional leadership approach also describes behaviour in which the leader actively intervenes if the previously negotiated procedures should no longer function properly. Significantly more passive control strategies are also understood as an element of transactional management.<sup>7</sup>

While transactional leadership ideally establishes a rule-based exchange relationship between manager and employee, transformational leadership focuses on the transformation or development of the employee: the manager encourages cooperation, and the employee's self-interest then gives way to a higher, emotionally significant goal in the background.<sup>8</sup>

Transformational leadership is essentially characterised by the fact that the leader clearly changes the behaviour and self-image of those who are being led, in such a way that those being led largely neglect their (selfish) self-interests in order to support the mission embodied by their superior. They show the leader trust, loyalty, respect and admiration and are ready to do more than usual for the leader and the mission or vision he is propagating.<sup>9</sup> In an older study, Baumgarten (1977) shows that Blake and Mouton provided another adequate two-dimensional view of leadership behaviour with their behaviour grid. The grid shown below is divided into nine sections vertically and horizontally. Possible management styles are identified as a combination of digits, with the expression of work orientation in front of the point and the expression of employee orientation of the superior after the point. The individual leadership styles can be briefly differentiated in terms of decision, conviction, effort, conflict, and emotions.<sup>10</sup>

## 2. RESEARCH METHOD

The survey is a classic instrument of data collection for the empirically oriented social and economic sciences disciplines. While survey techniques with little standardization are widespread within qualitative social research (e.g. the guided interview), the aim within quantitative social research is as high a standardization as possible. The standardization characterizes the degree of definition of the question text, the associated answer categories and the order in the questionnaire.<sup>11</sup>

The following questionnaire structure describe the approach of the data research method to generate the later shown results. The results are part of a pre study with 240 data sets who deals with more variables

The main source for questions about leadership styles is a study by Pearce and Sims (2002), as the MLQ is closely protected by copyright and high licensing fees. The authors have researched various leadership styles. The first style discussed is the "Aversive Leadership" style. It includes behaviours that are not pleasant. Two of the questions used

3 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 29.

4 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 29.

5 Cf. Wegge, J., von Rosenstil, L. (2019). "Führung." In: Schuler, H., Moser, K. (eds.), Lehrbuch Organisationspsychologie. Göttingen: Hogrefe, p. 291.

6 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 29.

7 Cf. Wegge, J., von Rosenstil, L. (2019). "Führung." In: Schuler, H., Moser, K. (eds.), Lehrbuch Organisationspsychologie. Göttingen: Hogrefe, p. 291.

8 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 30.

9 Cf. Wegge, J., von Rosenstil, L. (2019). "Führung." In: Schuler, H., Moser, K. (eds.), Lehrbuch Organisationspsychologie. Göttingen: Hogrefe, p. 292.

10 Cf. Baumgarten, R. (1977) Führungsstile und Führungstechniken. Berlin, New York: Walter de Gruyter, p. 78.

11 Cf. Reinecke, J. (2019) "Grundlagen der standardisierten Befragung." In: Baur, N. & Blasius, J. (Hrsg.) Handbuch Methoden der empirischen Sozialforschung. Wiesbaden: Springer Fachmedien Wiesbaden GmbH, p. 717.

by Pearce and Sims shall establish whether the style can still be found in Germany's automobile industry. The behaviours are "Intimidation "and "Reprimand. "The letter code refers to the leadership style (here: AL) and the sub-category (here: I for Intimidation).

The questions are:

AL-I1 "My manager is sometimes quite intimidating."

AL-I2 "My manager reprimands me when my performance is not up to par." 12

The "Directive Leadership" style is also confrontative. The first question taken from Pearce and Sims (2002) concerns "Assigned goals," the second "Instruction and command." The questions are:

DL-G "My manager sets the goals for my performance."

DL-I "My manager gives me instructions about how to do my work." 13

The "Transactional Leadership" style relates to issues such as material and personal recognition, as well as with Management by exception, both in the active and the passive form. It is recommended to companies that want to evaluate their management culture. Questions concerning material or personal rewards are:

TAL-R1 "My manager will recommend that I am compensated well if I perform well."

TAL-R2 "My manager gives me positive feedback when I perform well."

TAL-R3 "My manager commends me when I do a better-than-average job." 14

Questions taken from Pearce and Sims (2002) that relate to Management by Exception (either active or passive) are:

TAL-X1 "My manager directs attention toward failure to meet standards."

TAL-X2 "My manager delays taking action until problems become serious."

TAL-X3 "My manager tells me what I've done wrong rather than what I've done right." 15

According to Kraus and Kreitenweis (2020), testing the presence of the Transformational Leadership style includes questions about how managers articulate their vision, if they are role models or if they can promote acceptance of group goals, among others. The questions they suggest aim at companies with a dynamic environment, Intense competition, and strong pressure to innovate. The questions are especially apt for key positions with an innovative character.<sup>16</sup> The questions are taken from both sources, Pearce and Sims (2002) and Kraus and Kreitenweis (2020). The first set of questions deals with managers' performance expectations.

TFL-P1 "My manager expects me to perform at my highest level."

TFL-P2 "My manager encourages me to go above and beyond what is normally expected of one (e.g., extra effort)." 17

TFL-P3 "My manager is not satisfied with second-best solutions." 18

One question concerns the willingness of managers to challenge to status quo:

TFL-C1 "My manager is not afraid to 'break the mold' to find different ways of doing things." 19

Managers must also be able to formulate a convincing vision:

TFL-V1 "Because of my manager, I have a clear vision of or team's purpose." 20

TFL-V2 "My manager inspires others with his / her plans."

12 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 191.

13 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 191.

14 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 191f.

15 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 192.

16 Cf. Kraus, R., Kreitenweis, T. (2020) *Führung messen*, Heidelberg: Springer-Verlag GmbH Deutschland, p. 199.

17 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 192.

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20 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 192.



- TFL-V3 "My manager has a clear understanding of where we are going."21  
 Both sources address the managers' idealism with their questions:  
 TFL-I1 "My manager has a strong personal dedication to higher purposes or ideals."22  
 TFL-I2 "My manager leads through "setting an example" instead of just "speaking."23

Another important aspect in the inventory of questions is the managers' inspirational communication:

- TFL-CO1 "My manager shows enthusiasm for my efforts."  
 TFL-CO2 "My manager approaches a new project or task in an enthusiastic way."24  
 TFL-CO3 "My manager shows respect for my feelings."25

Managers should also be able to stimulate their subordinates intellectually:

- TFL-S1 "My manager emphasises the value of questioning team members."  
 TFL-S2 "My manager seeks a broad range of perspectives when solving problems."26  
 TFL-S3 "My manager stimulates me to think about old problems in new ways."27

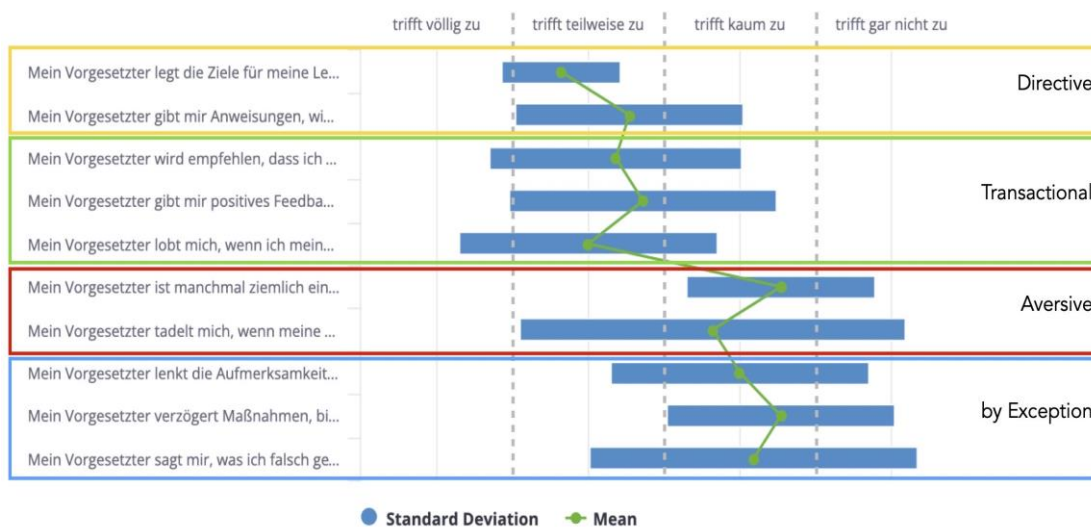
The ability to promote acceptance of group goals is crucial for Change Management. Two questions by Kraus and Kreitenweis (2020) aim at that ability.

- TFL-G1 "My manager encourages employees to be team players."  
 TFL-G2 "My manager manages to get a group together to work for the same goal."28

### 3. SURVEY RESULTS / STATISTICAL ANALYSE

Overall, 15 % of the respondents are female, and 85% are male and 100% working in the automotive industries (OEM and supplier /Tier 1).

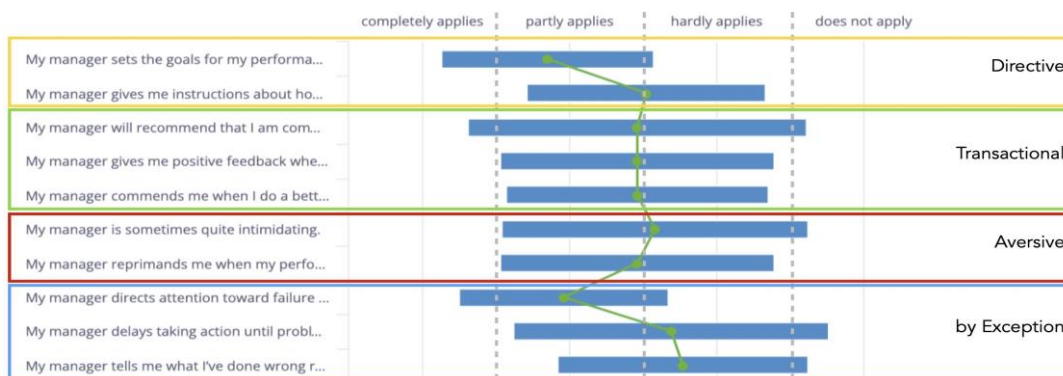
Figure 1: Directive, Aversive and Transactional Leadership (G) Source: Author's design



The graph above clearly shows that the German-speaking respondents reject two leadership styles. Neither Aversive Leadership nor Leadership by Exception exist in the respondents' companies. Instead, leaders seem to use the directive and transactional styles of leadership.

21 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 198.  
 22 Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: Group Dynamics: Theory, Research, and Practice 6(2), p. 192.  
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 27 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 198.  
 28 Cf. Kraus, R., Kreitenweis, T. (2020) Führung messen, Heidelberg: Springer-Verlag GmbH Deutschland, p. 198.

Figure 2: Directive, Aversive and Transactional Leadership (E) Source: Author's design



The overall trends for Transactional Leadership and Aversive Leadership are undecided, and the results hover between rejection and confirmation. The results for the group of English-speaking respondents are less clear. The respondents rejected most, but not all, characteristics of the Leadership by Exception style. Also, only one characteristic of the Directive Leadership style is present in their companies.

Figure 3: Transformational Leadership (G) Source: Author's design



The German-speaking did not reject any characteristic of the transformational leadership style. However, the values for some characteristics of social transformational performance and transformational challenge characteristics are close to neutral.

Figure 4: Transformational Leadership (E) Source: Author's design



Most variations of the English-speaking respondents for the transformational leadership style are close to neutral,

indicating that it is not discernible at their companies. However, the valuations of the transformational performance are positive and very similar to the valuations of the German-speaking respondents.

#### 4. ESSENCE RESULTS

**Aversive Leadership:**

Almost 60% of the respondents do not believe that their manager is occasionally intimidating

**Transactional Leadership:**

The style implies that leaders try to motivate employees through rewards and punishments.

**Management by Exception:**

Overall, two-thirds of the respondents confirm the presence of this leadership style.

**Transformational Leadership:**

Almost 70% of the respondents believe that their managers understand where the company is going.

Two-thirds of all respondents confirm that their managers have set a good example to their employees, one of the core qualities required of transformational leaders.

More than half of all respondents confirm that their managers show this behaviour, "setting an example".

#### References

- [1] Cf. Wegge, J., von Rosenstil, L. (2019). "Führung." In: Schuler, H., Moser, K. (eds.), *Lehrbuch Organisationspsychologie*. Göttingen: Hogrefe, p. 291.
- [2] Cf. Kraus, R., Kreitenweis, T. (2020) *Führung messen*, Heidelberg: Springer-Verlag GmbH Deutschland
- [3] Cf. Baumgarten, R. (1977) *Führungsstile und Führungstechniken*. Berlin, New York: Walter de Gruyter, p. 78.
- [4] Cf. Reinecke, J. (2019) "Grundlagen der standardisierten Befragung." In: Baur, N. & Blasius, J. (Hrsg.) *Handbuch Methoden der empirischen Sozialforschung*, Wiesbaden: Springer Fachmedien Wiesbaden GmbH, p. 717.
- [5] Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 191.
- [6] Cf. Pearce, C. L., Sims, H. P. (2002) "Vertical Versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams: An Examination of Aversive, Directive, Transactional, Transformational, and Empowering Leader Behaviors." In: *Group Dynamics: Theory, Research, and Practice* 6(2), p. 192.

# House Price Formation in Selected South European Countries. Do Institutional Factors Matter?

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## Abstract

This study provides a comprehensive analysis of housing markets in selected South European economies, emphasizing the impact of institutional factors alongside macroeconomic and demographic influences on house prices. The analysis revealed a positive association between disposable income and house prices while, conversely, escalating unemployment rates appeared to diminish the expectations of prospective homebuyers leading to lower house prices. On the demographic front, population growth effectively fueled the demand for housing, resulting in upward momentum in house prices. The study's novelty lies in its unique exploration of institutional factors. Beyond standard variables like housing financing and property taxation, it delves into the specific effects of property taxes on housing demand and price dynamics. Additionally, it introduces an innovative use of the "user cost of owner-occupied housing" concept, revealing the significance of property taxation, housing financing, and related components such as policy changes and tax incentives. Lastly, it pioneers the inclusion of a component related to the real estate sector within the Index of Economic Freedom, namely the property rights. This addition highlights a positive relationship between property rights protection and house price trends.

**Keywords:** Housing Market, House Price Index, Institutional Factors, User Cost of (owner-occupied) Housing (UCOH), Property Rights, South Europe.

## 1. INTRODUCTION

A substantial body of economic research and subsequent policy formulation has centered around the pivotal role of housing prices. Notably, escalating housing prices not only stimulate consumer expenditure but also catalyze heightened economic expansion [1]. Furthermore, it is imperative to underscore the interconnectedness of the housing market with the loan portfolios of financial institutions, particularly banks, which extend funding for the construction, development, and sale of residential properties [2]. Conversely, the housing market warrants consideration as a potential wellspring of financial crises and vulnerabilities within the banking sector, given that a substantial proportion of the global growth in bank balance sheets over recent decades has been attributed to the amplification of mortgage lending activities.

In the aforementioned context, the determinants of housing prices have emerged as a subject of considerable research interest, constituting the central theme of the present study. This investigation delves into the factors influencing house prices within the scope of five South European nations: Portugal, Spain, Italy, Greece, and Cyprus, spanning the timeframe from 2000 to 2020. The empirical analysis primarily concentrates on factors originating from the demand side of the housing market, with particular emphasis directed towards institutional elements. It is essential

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to note that the study deliberately excludes the period post-2020 from its purview, as this timeframe lies outside the study's objectives. This decision is informed by the unique conditions that have arisen in residential markets globally, stemming from the repercussions of the COVID-19 pandemic.

The selection of the sample countries is underpinned by factors extending beyond their geographic location in Southern Europe. These nations share noteworthy commonalities in terms of economic performance and the trajectory of housing prices. Each of the five economies endured profound repercussions stemming from the global economic crisis that commenced in 2008, followed by the subsequent debt crisis, leading to marked contractions in their respective growth rates, and, in some instances, even manifesting negative growth in the initial phases of the crisis. These notably low or negative growth rates are depicted in Fig. 1.

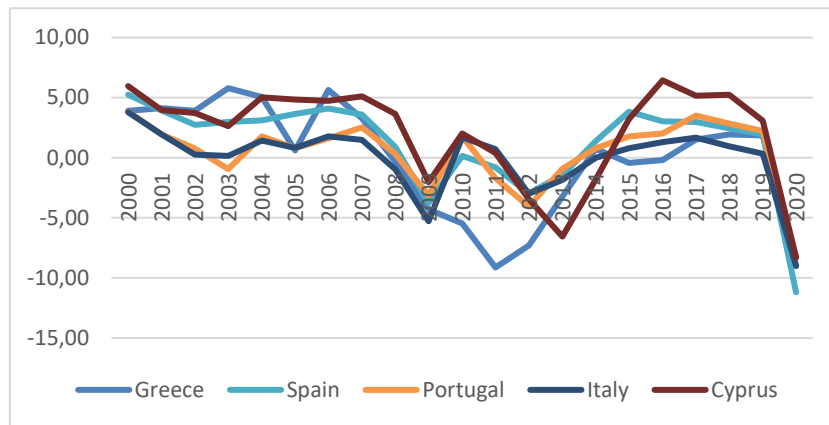


Fig. 1. GDP Growth in Selected Economies, 2000 – 2020. Source: Eurostat, authors' compilation.

Furthermore, an examination of the residential property markets in the selected economies reveals a conspicuous alignment in their historical patterns. As illustrated in Fig. 2, housing prices in all five countries exhibited a consistent upward trajectory until the onset of the 2007-2008 period. Subsequently, there was a precipitous decline in house prices, a decline that persisted for nearly a decade. Following a brief period of stabilization lasting two to three years, a resurgence in house prices became evident.

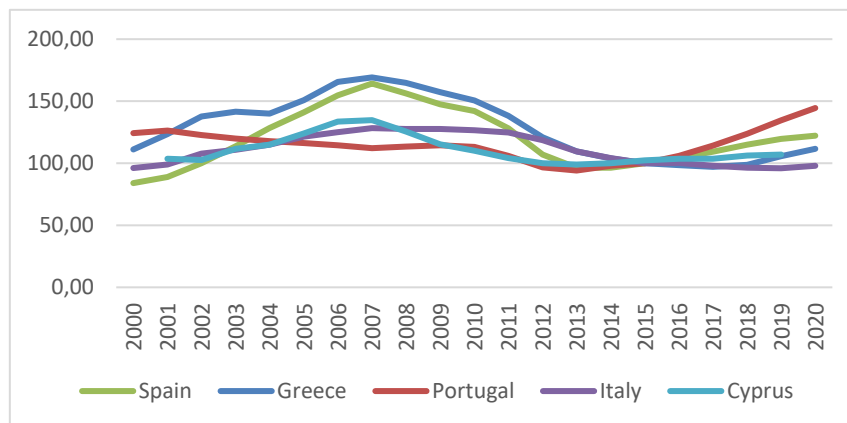


Fig. 2. House Price Index in Selected Economies, 2000 - 2020 (2015 = 100). Source: Eurostat, authors' compilation

An additional, albeit less conspicuous, criterion influencing the selection of these countries pertains to their notably high rates of home ownership. Approximately 70% of the total residential units in the five countries under examination are owner-occupied. To be more precise, the homeownership ratio spans from 67.9% in Cyprus to 76.2% in Spain, with all five nations surpassing the euro area average of 65.8%. In the broader European context, it is worth noting that Hungary stands out with an exceptionally high ratio of nearly 91%. Conversely, Switzerland and Germany exhibit the lowest ratios at 41.6% and 51.1%, respectively. For a comprehensive overview, refer to Fig. 3. This characteristic further accentuates the relevance of these countries as a collective subject for analysis within the context of housing price determinants while the elevated prevalence of home ownership within the five selected countries signifies a

shared cultural characteristic inherent in Southern European societies, centered on the concepts of "home" and "family."

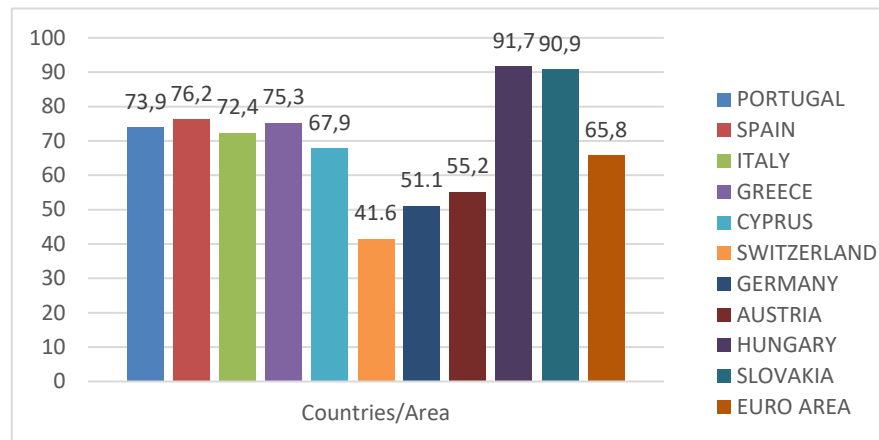


Fig. 3. Home Ownership Ratio in Selected European Countries, 2020. Source: Eurostat, authors' compilation

Building upon the observed commonalities among the countries under scrutiny and a comprehensive review of the literature regarding both demand and supply side drivers of house prices, the empirical analysis in this study is designed to ascertain whether the specific price dynamics postulated in theoretical frameworks find empirical support within the data spanning the period under investigation. Moreover, the empirical findings aim to elucidate the impact of institutional factors on the conventional demand drivers, leveraging previously unexplored proxies.

To provide a more detailed account, the study employs the concept of "user cost," as quantified by the European Commission.<sup>1</sup> This metric serves to assess the sole influence of various cost-related aspects associated with homeownership, encompassing factors such as tax incentives and property levies, among others. Additionally, the study incorporates an international benchmarking indicator germane to the real estate sector: property rights. This indicator is sourced from the Index of Economic Freedom, calculated, and published by the Heritage Foundation. It is introduced in an effort to discern any discernible relationship between the extent to which property rights are safeguarded within the economies under examination and the resultant trends in house prices. In essence, this empirical analysis endeavors to bridge the theoretical constructs with real-world data, shedding light on the intricate interplay between established housing demand drivers and the influence of institutional factors, as exemplified by user costs (for owner-occupied house) and property rights protection.

The rest of the study is organized as follows: Section 2, initially provides an overview of previous empirical studies relevant to the topic, and then focuses on studies dealing with the specific countries under examination. The theoretical framework is developed in section 3 while variables and the data utilized are also described. Empirical findings are discussed in section 4 and a final section concludes the study.

## 2. PREVIOUS EMPIRICAL STUDIES

Within the framework elucidated above, this section offers an overview, drawing from pertinent literature, of the multifaceted factors that exert influence upon house prices. It is worth noting that the majority of studies predominantly delve into the realm of demand drivers, although it is recognized that supply-side factors also bear significance in shaping house price dynamics. Nevertheless, it is imperative to underscore that scant attention has been directed towards the exploration of the role played by institutional factors within the existing body of literature.

As far as the demand-side factors are concerned, household disposable income seems to be one of the most important drivers of house price formation [3–9]. Indeed, as disposable income levels rise, households typically allocate more resources to housing expenditures, thereby enhancing their capacity to either purchase a house outright or service a mortgage effectively. Consequently, heightened disposable income levels serve as a catalyst for increased demand within the housing market. This heightened demand, when considered against the backdrop of a housing supply that is relatively inelastic in the short term, invariably exerts upward pressure on housing prices.

<sup>1</sup> Housing Taxation Database is offered by the Joint Research Centre/European Commission's in-house science service.

Alternatively, Gross Domestic Product (GDP growth rate has been also found to be a significant driver of housing prices [10-12], implying the importance of macroprudential policy on the fluctuations of the housing market. In light of the positive correlation between economic prosperity and household purchasing power, it follows that GDP expansion exerts a notable influence on the demand for housing, consequently impacting housing prices. Enhanced economic well-being enhances households' capacity to engage in higher consumption levels, including property acquisitions. On the contrary, inflation seems to have a negative impact on house prices [4,13,14]. Inflationary pressures tend to decrease the purchasing parity of potential house buyers, leading to low demand for houses which in turn leads to lower house prices.

Favorable demographic characteristics of a country might cause an increase in house prices, by boosting demand for houses. Research has indicated that population growth and the influx of migrants exert a robust positive influence on housing prices [4,15, 16]. The rate of urbanization has been also found to positively affect real house prices [17-19]. On the other hand, unemployment rate seems to affect adversely house prices [3,14]. Unemployment constrains the demand for housing as job loss results in diminished income, rendering the acquisition of homes less financially viable.

Due to the close interconnection between the housing market and the loan market, especially considering that a significant portion of home acquisitions relies on mortgage financing, a subset of demand-side factors encompasses elements pertinent to the mortgage market. More specifically, long term interest rate [3-5], mortgages growth rate [14], money supply growth rate (13-15) or, alternatively, bank credit [10], have been found to significantly affect house prices. A reduction in interest rates effectively lowers the cost of borrowing, thereby stimulating interest from prospective homebuyers and resulting in an attendant increase in housing demand. Conversely, an elevation in interest rates discourages potential buyers who may encounter challenges securing loans, subsequently prompting their withdrawal from the housing market, which in turn leads to a decrease in housing demand, ultimately exerting downward pressure on housing prices. Regarding supply-side factors, the main driver of prices seems to be construction cost [4,5, 20]. Such higher costs discourage construction of new houses, making the existing ones more expensive.

In terms of institutional considerations, it is noteworthy that taxation policies in numerous countries have traditionally favored homeownership. Within the Eurozone, many governments actively promote housing investments, either through direct subsidies or by means of tax deductions [21]. Taxation related institutional factors include incentives that are given to potential house buyers, such as the tax relief through mortgage interest deductibility [16], which encourages house purchases by allowing taxpayers who own their homes to reduce their taxable income by the amount of interest paid on the loan. Tax incentives designed to facilitate mortgage financing and homeownership, by diminishing the user cost associated with owner occupied housing, have the potential to contribute to elevated and escalating housing prices.

In general, prior research conducted across various country groups, notably the OECD, the USA, industrialized nations, and advanced economies, has consistently identified a set of influential factors driving residential property prices. These factors typically encompass favorable macroeconomic conditions, demographic dynamics, aspects related to bank credit, and the presence of low construction costs. However, given the specific focus of this study on a distinct group of countries, it is essential to delineate the key factors that have been highlighted in the relevant literature as affecting house prices within the context of these five specific nations.

### *2.1. Portugal*

In line with the discussion made above are, among others, the findings of Lourenço & Rodriguez [6], who dealt with the macroeconomic fundamentals of house prices in Portugal for the period 1980 – 2010. According to the researchers, disposable income was positively related to house prices while unemployment and interest rate had an adverse impact. On a more recent study, Lourenço & Rodriguez [22] underlined the role of GDP growth, labor market and interest rates on house price dynamics in Portugal, for the period 1996 – 2017.

In a relative study, Tavares [20] confirmed the significant role of interest rates in Portuguese house market, by further examining the impact of EU accession on the decline of interest rates and the subsequent increased demand for houses. In a more contemporary investigation conducted by Luo et al. [21], which scrutinized house prices in Portugal over the span of 2004 to 2018, notable emphasis was placed on the influence of immigrant inflows in bolstering the demand for residential properties during the aforementioned timeframe. Additionally, the researchers posited that the Golden Visa program, which provides tax benefits, contributed to heightened demand within the Portuguese housing market.



## 2.2. Spain

Apart from the study of Lourenço & Rodriguez [6], already mentioned above, most studies dealing with the Spanish house market confirm the fundamentals of house prices discussed so far; Taltavull de La Paz & White [25] in a comparative study, examined the interaction between the housing market, the financial sector, and the macroeconomy and found that income has caused house price appreciation in Spain, interacting with migration flows. Also, income played a significant role in house price determination though not the leading one. Further, the evidence provided by the study of Pagés & Maza [26] suggested income and nominal interest rates are pivotal explanatory factors for house prices during the period 1977 – 2004, while the findings of Ayuso et al. [27] and Cuestas [28] confirmed the negative impact of inclining interest rates on house prices in Spain for the period 2001 – 2008.

The household's disposable income and the level of employment were the two key variables determining the demand for houses during the period 1990 – 2007, according to the study of Meliveo [29]. The researcher further examined the role of taxation on the Spanish house market, concluding that even removing mortgage interest deductions in 2004, would have had significant effects on the actual increase in house prices. Lastly, García-Vaquero & Pagés [30] also investigated the potential effects of taxes on the housing market in Spain, by concluding to the beneficiary effects of the tax incentives for the acquisition of homes in Spain for the period 1986-2004.

## 2.3. Italy

Caliman & Di Bella [31] conducted a comprehensive modeling of house prices in Italy, encompassing the period from 1994 to 2008. Their analysis extended across all Italian provinces and incorporated an array of factors, including an affordability ratio, a persistence term, and various socio-economic and credit market variables. The overarching objective of their research was to assess the presence of a house price boom at the national level within Italy during this period. The results of the paper support evidence of house price spatial autocorrelation. No evidence of housing price overvaluation in Italy was found, in comparison with the fundamental values determined by interest rates, household income, employment and construction cost.

A more recent study of Nobili & Zollino [32] showed that house prices reacted for the period 1986 – 2010, mostly to standard drivers such as, disposable income and demographic pressures while lending conditions also exerted a significant impact. The researchers underlined the fact that during the global financial crisis, the worsening in credit supply conditions dampened house price dynamics. In their study, Casolaro and Fabrizi [33] provided compelling evidence that the levels of house prices are notably influenced by disparities in household income. Furthermore, their research demonstrated that variations in housing prices are also significantly driven by favorable labor market conditions, particularly characterized by low unemployment rates.

## 2.4. Greece

In the context of the Greek housing market, several notable studies have explored the determinants of house prices over various periods. Apergis and Rezitis [13] focused on the period from 1981 to 1999, investigating the impact of macroeconomic variables. They concluded that the interest rate exhibited the highest explanatory power for house price dynamics, followed by inflation and employment. The findings of Merikas et al. [20], spanning from 1985 to 2008, align with the aforementioned research, highlighting the significance of macroeconomic factors. Similarly, Katrakilidis and Trachanas [34] concentrated on the Consumer Price Index (CPI) and its role in influencing house prices. Their findings revealed significant asymmetric effects of CPI on house prices during the period from 1999 to 2011.

Brissimis and Vlassopoulos [35] delved into the interaction between mortgage financing and housing prices during the years 1993 to 2005. Their results did not suggest a long-term causal relationship between mortgages and housing prices. However, they did find evidence supporting a bidirectional short-term relationship between these variables. The role of mortgage financing was further underscored by Panagiotidis and Printzis [14], who demonstrated that mortgage loans wielded the most explanatory power for variations in the Houses Price Index (HPI) during the period from 2007 to 2013. A more recent study by Kapopoulos et al. [36] examined house price fluctuations in Greece from 1998 to 2019, reaffirming the paramount influence of mortgage financing.

Lastly, Filippakopoulou and Potsiou [37] investigated the impact of property taxation on the real estate market in Greece for the period from 2007 to 2013. It's important to note that their analysis was primarily descriptive and did not employ econometric methods to support their hypotheses regarding the role of the objective mass valuation system.



### 2.5. Cyprus

Michail & Thucydides [9] examined interlinkages between house prices, foreign demand, income growth, credit, interest rates, cost of construction and inflation in Cyprus. The results suggested that the share of foreigners in total real estate demand had a strong effect on house prices, while the effect of overall FDI flows to real estate was small. Interestingly, the authors did not find any direct relationship between real GDP growth and housing prices, most likely due to the fact that house prices are not expected to react contemporaneously to economic growth.

On the contrary, the findings of Sivitanides [38], for the period 2006 – 2014, indicated that nominal GDP per capita, or alternatively, nominal GDP, have the largest impact on prices. Also, construction costs and the number of households were found to have a significant effect on house prices, while interest rates were found to have the smallest effect on house prices. In a similar study, Pashardes & Savva [39] also found interest rates to be statistically insignificant.

Earlier studies have dealt with the significance of GDP growth and disposable income (39,40) in the Cypriot housing market while demographic characteristics, such as population growth, were also found to be significant [39,41] while, regarding the supply-side conditions and the role of construction costs on house price formation, previous studies attributed a decline in the supply of houses in Cyprus to the increasing materials and labor costs, respectively.

## 3. THEORETICAL FRAMEWORK – VARIABLES' AND DATA DESCRIPTION

In the analysis of house price dynamics, a conventional approach involves the incorporation of models designed to capture fluctuations in both housing demand and supply, as observed in the study by Egert and Dubravko [42]. In particular, the model employed in this study, integrates a range of demand-side factors, with a particular focus on macroeconomic conditions (referred to as MACRO), encompassing variables such as adjusted disposable income and population. Additionally, demographic factors (referred to as DEMO) are considered within the framework.

Furthermore, the model encompasses a vector of institutional factors (referred to as INST), which encompasses variables related to housing taxation. Notably, this set of institutional factors is extended by introducing a novel component, a specific pillar associated with the international benchmarking indicator, denoted as property rights.<sup>2</sup> This represents the first instance of the inclusion of such a component in housing market analysis, broadening the scope of institutional considerations within the study. Note that the countries under examination exhibit high index values, indicating that governments in these countries pay special attention to the protection of property rights, with Cyprus exhibiting the highest value (77.40), as depicted in Fig. 4. With the exception of Portugal, which exhibited a stable index value during the whole sample period, the rest of the countries' index fluctuated until 2016, when they started improving to get finally stabilized since 2018 (see. Fig. 5).

The utilization of a unique indicator provided by the European Commission to proxy the user cost of owner-occupied housing represents a novel addition to the analytical framework. This indicator is of paramount importance as it comprehensively encompasses various facets of the user cost of owner-occupied housing, including factors such as tax incentives related to debt-financed housing, transfer taxes on property sales, and capital gains taxes. Moreover, it serves as a valuable tool for monitoring the effects of policy adjustments in this context. The evolution of the UCOH Index is depicted on Fig. 6.

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<sup>2</sup> Property Rights is one of the three components of the pillar Rule of Law of the Index of Economic Freedom. The index consists of four, in total, pillars whereas it is measured and published by The Heritage Foundation (sometimes referred to simply as Heritage), an activist American conservative think tank, founded in 1973.

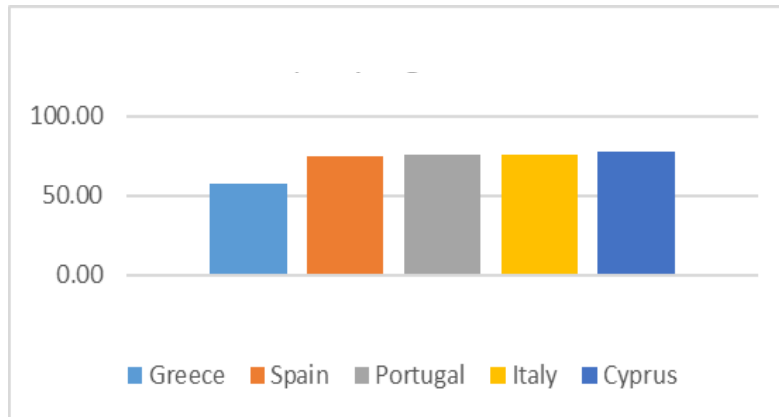


Fig. 4. Property Rights Index in Selected Economies, 2020. Source: The Heritage Foundation/ Index of Economic Freedom, authors' compilation.

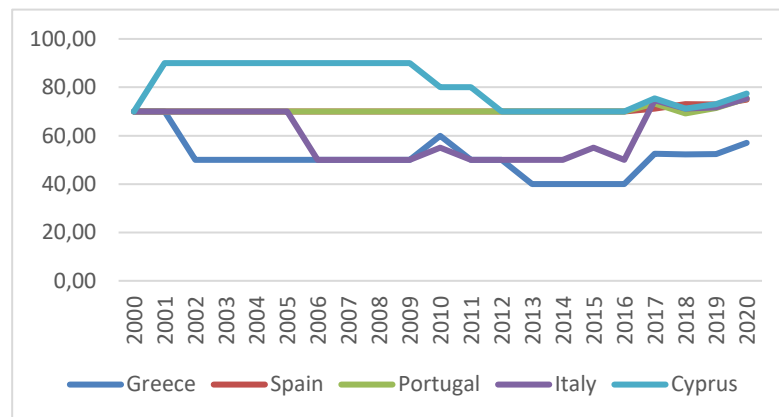


Fig. 5. Property Rights Index in Selected Economies, 2000-2020. Source: The Heritage Foundation / Index of Economic Freedom, Freedom, authors' compilation

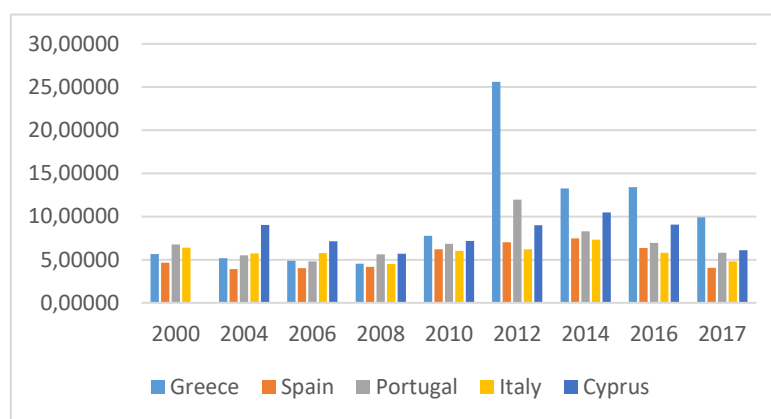


Fig. 6. User cost of (owner-occupied) housing (UCOH) in selected economies, 2000 – 2017. Source: European Commission, authors' compilation

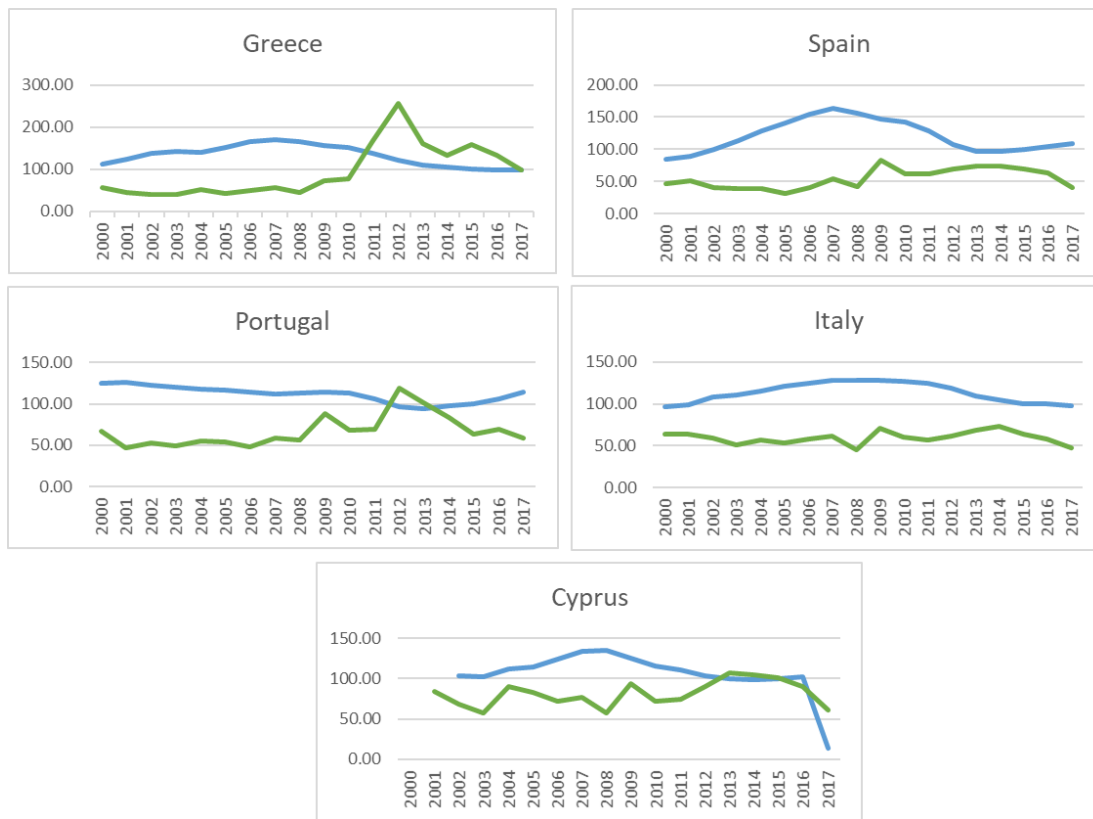


Fig. 7. House price index (HPI) and user cost of (owner – occupied) housing (UCOH) in selected economies, 2010 – 2017.

Note: Blue line denotes HPI, green line denotes UCOH. Source: European Commission, authors' compilation.

Within the framework of institutional factors, mortgage interest rates are considered a pertinent component due to their susceptibility, to some extent, to government oversight and intervention. In recognition of the intricate interplay between demand and supply factors that jointly determine an equilibrium level for real house prices, construction costs (referred to as CONSTR) are incorporated into the analysis to capture elements pertaining to the housing supply side.

Within this overarching framework, the house price index in the countries under examination is given by the following equation:

$$HPI_{it} = \beta_0 + \beta_1 MACRO_{it} + \beta_2 DEMO_{it} + \beta_3 INST_{it} + \beta_5 CONSTR_{it} + \varepsilon_{it} \tag{1}$$

The dataset utilized in this study encompasses a series of variables drawn from previous research endeavours, as well as additional variables that have not been previously explored. The primary focus is on house prices, represented by the House Price Index (HPI) constructed by Eurostat, serving as the dependent variable. Concurrently, a set of alternative explanatory variables is employed to capture macroeconomic, demographic, and institutional factors, denoted in equation (1).

Macroeconomic conditions are proxied by disposable income (DISP), as computed by Eurostat. This metric represents the adjusted gross disposable income of households, normalized by the purchasing power parities of actual individual household consumption and the total resident population within the respective countries under examination. Additionally, the unemployment rate (UNEMPL) within the countries of interest, drawn from the Eurostat database, is employed as another macroeconomic indicator. Population figures for the five countries (POP) are sourced from the World Bank, enabling the capture of demographic conditions.

In the realm of institutional factors, bank credit for house purchases is represented by the mortgage interest rate (MIR), sourced from the respective Central Banks and consolidated by the author. Property taxation is explored through three distinct variables. Initially, property tax as a percentage of Gross Domestic Product (TAX\_GDP) within each country of interest is considered, using data from the OECD database. This variable provides a comprehensive view of property taxation in general. Additionally, the rates of two specific property taxes, namely the transfer tax

(*TRASF\_TAX*) and implicit tax (*IMPL\_TAX*), are incorporated. Transfer tax rates are obtained from the European Commission, while implicit property tax rates are computed by the European Commission based on tax revenues and dwelling stock data.

The tax burden on owner-occupied housing is quantified through the use of the user cost of housing indicator (*UCOH*), a complex metric provided by the European Commission. *UCOH* assesses the annual cost of owning the primary residence per additional euro of house value and allows for tracking the impact of policy changes, house prices, and other relevant determinants of the user cost of owner-occupied housing, including tax reliefs on debt-financed housing and capital gains taxes.

To investigate the potential influence of a country's legal framework on individuals' ability to accumulate private property and, subsequently, on housing demand and prices, the property rights component (*PROP\_RIGHT*) of the Index of Economic Freedom is employed. This index, produced by The Heritage Foundation, quantifies the extent to which a country's laws protect private property rights and how effectively these laws are upheld. A higher score indicates stronger protection of property rights, while a lower score suggests a higher risk of government property expropriation. Lastly, supply-side factors are addressed by incorporating construction costs (*CONSTR*). This variable encompasses the total construction cost of new residential buildings in the countries under examination, encompassing both material and labor expenses, as reported by Eurostat.

The dataset covers a time span from 2000 to 2020 while the selection criteria for the specific countries of interest have been discussed in section 1.<sup>3</sup>

#### 4. EMPIRICAL FINDINGS

Table 1 presents the estimates of several model specifications that account for the effect of various factors based on the theoretical context described above, on house price index of the selected economies under examination. Model (1) represents the baseline panel regression model in which demand and supply factors are employed. Given that the study focuses on institutional factors, aiming to examine their role on house prices through their potential effect on housing demand, the rest of the models (2-7) include demand side factors only.

Given their positive, as expected, sign, disposable income, and population as well, positively affect house price index in the countries under examination. Also, the sign of variable *CONSTR* indicates the positive relationship between construction costs and house prices; increases in construction cost cause a decrease in housing supply which in turn puts an upward pressure on house prices.

As already mentioned above, the rest of the models (2-7) test the role of institutional factors along with macroeconomic and demographic ones. Macroeconomic factors are proxied with the disposable income in all models, except for model (4) in which the variable unemployment is employed, instead. The signs of both variables are the expected ones. More specifically, the positive sign of *DISP\_INC* indicates that higher levels of disposable income stimulate housing demand, pushing house prices up. On the contrary, the negative sign of *UNEMPL* indicates that high unemployment rates, either implying economic recession or uncertainty for the potential house buyer, discourage house purchases. The decreased housing demand caused, pushes housing prices down.

Regarding demographic factors, the sign of *POP*, in all models employed, indicates a positive relationship between population in the countries under examination and house price prices in the respective countries. The more the potential house byers, the higher the demand for housing, which in turn increases house prices.

As far as the institutional factors are concerned, *TAX\_GDP* has the expected negative sign (model 2). Though, the significance level of the variable does not provide evidence on the role of taxation, overall, in the countries under examination. However, specifying property taxation, by employing the variable *IMPL\_TAX* (model 3) and alternatively the variable *TRANS\_TAX* (model 4), the results provide evidence indicative of the role of property taxation on house prices. More specifically, the negative sign of both variables implies that imposing property taxes discourage potential house buyers, decreasing therefore housing demand.

Table 1. Panel Data Regression Results

Dependent Variable: HPI							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>IMPL_TAX</i>			-0.031** (0.012)				
<i>TRANS_TAX</i>				-4.919*** (0.978)	2.273*** (0.539)		

<sup>3</sup> The data taken from the European Commission's Survey (Property Taxation Database) cover the period 200 – 2017.

TAX_GDP								-4.950 (3.556)
PROP_RIGHT								0.323* (0.170)
DISP_INC	0.785*** (0.101)	0.000*** (0.000)	0.895*** (0.117)		1.272*** (0.098)	0.000*** (0.000)	0.000*** (0.000)	
POP	9.458*** (1.256)	0.000*** (0.000)	7.203*** (1.536)	17.148*** (1.375)		0.000*** (0.000)	0.000*** (0.000)	
UNEMPL				-0.023*** (0.003)				
MIR					0.008*** (0.002)			
UCOH								-0.538* (0.297)
CONSTR	0.000*** (0.000)							
Constant	-157.445	-902.361	-122.891	-272.454	-10.665	-1163.51	-456.98	
Number of Obs.	105	105	88	88	88	105	105	
R-squared	0.97	0.94	0.94	0.93	0.94	0.95	0.93	

\*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

The adverse effects of taxation on house prices implied above, are confirmed in model (5). Introducing the variable that captures the cost of financing house purchase, that is the mortgage interest rate (MIR), the variable TRANS\_TAX remains significantly negative. Similarly, the negative sign of MIR implies that increasing interest rates make housing financing less accessible, constituting thus a great portion of houses less affordable. As a result, demand for housing is negatively affected, leading house prices to fall.

As a robustness test, regarding the significant role of taxation and financing housing on house prices, the variable UCOH is employed in model (6). Remarkably, the variable, beyond measuring the tax burden on owner-occupied housing and the recurrent property taxes, further measures taxes on the flow of services from ownership (imputed rents) and, interestingly, any tax reliefs on debt financed housing. UCOH is found to be significant and negatively related to house prices. Given the multiple character of the variable due to the numerous institutional factors it captures, its significance level and (negative) sign provide strong evidence supportive of the significant role of institutional factors on house price formation in the selected economies. Favorable regulations that would alter one or more components of the index, could lead to a lower user cost of owner-occupied housing, buffering to an extent the adverse effects of the latter on house price formation.

Lastly, in model (7) the quantifiable measure of property rights (PROP\_RIGHT) is tested in respect to the extent it affects housing demand and, therefore, house prices. Considering the discussion made in section 1 over the common culture of the sample countries, in terms of “home” and “family”, and the respective home ownership rates, one would expect the variable to be positive. Indeed, the variable’s positive sign indicates that the higher the degree to which the selected countries’ laws protect private property rights and the extent to which those laws are respected, the more probable the decision to buy a house in these economies. In other words, high degree of property rights protection, encourage potential house buyers to own a property while the implied augmented demand puts an upward pressure on house prices.

#### 4. CONCLUSIONS

Based on the standard theory which suggests residential prices are formed by macroeconomic, demographic, and institutional factors, this paper provides empirical evidence on the determinants of house prices in selected South European economies, covering a time span of over two decades.

The novelty of this study lies in its distinctive approach toward institutional factors and the depth of the ensuing discussion. Beyond conventional institutional variables relevant to housing financing and property taxation, this study delves into the specific impact of property taxes on housing demand and, consequently, on price dynamics. Moreover, it introduces a pioneering use of the “user cost of owner-occupied house” index (UCOH) provided by the European Commission. This novel application allows for an exploration of not only the influence of property taxation and

housing financing but also the broader implications of other components within the UCOH index. These encompass the effects of policy changes, tax reliefs related to debt-financed housing, and capital gains taxes.

Furthermore, the study ventures into uncharted territory by examining the role of property rights in the countries under investigation, as quantified by The Heritage Foundation's Index of Economic Freedom. This marks the first instance in which the impact of property rights on house price formation within these countries is scrutinized. These innovative methodological and analytical approaches enhance the comprehensiveness and depth of the study's contribution to the understanding of housing market dynamics.

Considering the housing supply-side factors, according to the empirical findings of the study, increases in the material and labor cost, as well, discouraged construction activity, leading to lower housing supply which, in turn, put an upward pressure in house prices.

While the primary focus of this study centered on institutional factors, it was deemed essential to consider them within the broader context of the two other critical factors: macroeconomic and demographic conditions. Regarding macroeconomic factors, the analysis revealed a positive association between disposable income in the selected economies and house prices. This outcome implies that as disposable income levels rise, households have a greater capacity to allocate resources toward housing purchases, thereby exerting upward pressure on house prices. Conversely, the results indicated an adverse relationship with unemployment. Beyond the direct impact of unemployment on disposable income, which affects the portion available for housing purchases, escalating unemployment rates appeared to diminish the expectations of prospective homebuyers. This dampening effect on expectations discouraged individuals from entering the housing market, contributing to a reduction in housing demand and, consequently, house prices.

Turning to demographic factors, population growth emerged as a pivotal driver of housing demand within the selected countries. This population growth effectively fueled the demand for housing, resulting in upward momentum in house prices. This finding underscores the significant influence of demographic dynamics on the housing market, where an expanding population contributes to heightened housing demand and associated price increases.

It is noteworthy that a substantial proportion of the residential properties acquired in the countries under scrutiny were likely financed through bank mortgages. This is a pertinent observation, considering that the study uncovered a negative relationship between mortgage interest rates and house prices during the period of analysis. Escalations in mortgage rates were found to increase the cost of borrowing, thereby diminishing housing demand and ultimately contributing to a decline in house prices. This underscores the critical role of mortgage financing and interest rates in shaping the dynamics of the housing market within the examined countries.

Further, the significantly negative relation between the variable UCOH and house price index, provided evidence indicative of the role policy changes in the selected economies played on house price formation. Augmented costs of acquiring or possessing a house, due to lowering or even revoking tax reliefs on debt financed housing or due to increasing capital gains taxes have led to diminished demand for housing, which in turn, pushed prices down.

Remarkably, the study offers, for the first time, evidence supportive of the significant role of property rights on house prices. The results unequivocally demonstrate that higher values of the property rights index are positively correlated with increases in house prices. In simpler terms, in the countries under investigation, stronger protection of property rights is associated with higher prices in their respective residential property markets. The elevated values of the property rights index indicate that the legal frameworks in these nations have effectively facilitated the accumulation of private property and have provided robust protections for properties through clear and well-enforced laws.

In light of these findings, it can be asserted that the confidence instilled by the robust protection of property rights among potential homebuyers has played a pivotal role in stimulating housing demand, consequently propelling house prices upward. This novel insight underscores the profound influence that legal frameworks and property rights can exert on the dynamics of housing markets and, by extension, on the broader economy.

The findings elucidated in this study hold valuable implications for policymakers contemplating strategies to ensure stability in house prices. Vigilantly tracking the trajectories of macroeconomic, demographic, and institutional factors can provide valuable insights into potential future shifts in house prices. Furthermore, comprehending the mechanisms through which these specific factors influence housing supply and demand offers a powerful tool for managing house prices when deemed necessary. It is important to note that while this study has shed light on crucial aspects of the housing market, the list of explanatory variables, whether from the demand or supply side, is not exhaustive. Therefore, policymakers should exercise caution when interpreting and applying these findings. They should consider the broader landscape of housing market dynamics and engage in ongoing research to refine their understanding and policies as market conditions evolve.

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## References

- [1] Tripathi, S. (2020). Macroeconomic Determinants of Housing Prices: A Cross Country Level Analysis. *Real Estate Finance*, Spring 2020, 229 – 238.
- [2] European Systemic Risk Board (ESRB). (2015). Report on residential real estate and financial stability in the EU (December 2015), *Executive Summary*.
- [3] Andrews, D. (2010). Real House Prices in OECD Countries: The Role of Demand Shocks and Structural and Policy Factors. *OECD Economics Department, Working Papers No. 831*. OECD Publishing.
- [4] Turk, R. (2015). Housing Price and Household Debt Interactions in Sweden. *IMF Working Paper 15/276*.
- [5] Geng, N. (2018). Fundamental Drivers of House Prices in Advanced Economies. *IMF Working Paper European Department, WP/18/164*.
- [6] Lourenço, R.F. & Rodrigues, M.M. (2014). The Dynamics and Contrast of House Prices in Portugal and Spain. Banco d Portugal. *Economic Bulletin*, December 2014.
- [7] Nobili, A., & Zollino, F. (2017). A structural model for the housing and credit market in Italy. *Journal of Housing Economics*, 36, 73 – 87.
- [8] White, M. & Papastamos, D. (2018). An analysis of regional house prices in Greece. *Journal of European Real Estate Research*, JERER-07-2018-0033.R3.
- [9] Michail, N. & Thucydides, G. (2019). The impact of foreign demand on Cyprus house prices. *Cyprus Economic Policy Review*, 13(2), 48 - 71.
- [10] Tsatsaronis, K. & Zhu, H. (2004). What drives housing price dynamics: Cross-country evidence. *BIS Quarterly Review*, March 2004
- [11] Iacoviello, M., & Neri, S. (2008) Housing market spillovers: evidence from an estimated DSGE model. *NBB Working Paper, No. 145, National Bank of Belgium, Brussels*.
- [12] Mikhed, V. & Zemcik, P. (2009). Do house prices reflect fundamentals? Aggregate and panel data evidence. *Journal of Housing Economics* 18, 140 – 149.
- [13] Apergis, N. and Rezitis, A. (2003). Housing prices and macroeconomic factors: prospects within the European monetary union. *Applied Economic Letters*, 10(12), 799 – 804.
- [14] Panagiotidis, T., & Printzis, P. (2016). On the macroeconomic determinants of the housing market in Greece: a VECM approach. *International Economic Policy*, 13, 387–409.
- [15] Baffoe-Bonnie, J. (1998). The Dynamic Impact of Macroeconomic Aggregates on Housing Prices and Stock of Houses: A National and Regional Analysis. *Journal of Real Estate Finance and Economics*, 17(2), 179 – 197.
- [16] Geng, N. (2018). Fundamental Drivers of House Prices in Advanced Economies. *IMF Working Paper European Department, WP/18/164*
- [17] Wang, Z.M., Wang, C.Z. & Zhang, Q. (2015). Population Ageing, Urbanization and Housing Demand. *Journal of Service Science and Management*, 8, 516-525.
- [18] Yingchao L., Zhili M., Ke Z., Weiyang H. & Wei, J. 2018. The Impact of Population Migration on Urban Housing Prices: Evidence from China's Major Cities. *Sustainability*, 10(9), 3169
- [19] Churchill, S., Hailemariam, Ab. & Erdiaw-Kwasie, M. O. (2020). Urbanization and Housing Prices in OECD Countries: 1870 to 2016 (August 13, 2020). Available at SSRN: <https://ssrn.com/abstract=3673260> or <http://dx.doi.org/10.2139/ssrn.3673260>
- [20] Merikas, A. G., Merika, A., Triantafyllou, A. & Gounopoulos, D. (2010). Explaining house price changes in Greece. *Applied Financial Economics*, 22 (4).
- [21] European Central Bank (ECB). (2009). Housing Finance in the Euro Area. *Occasional Paper Series No 101 / March 2009*
- [22] Lourenço, R.F. and Rodrigues, M.M. (2017). House prices in Portugal - what happened since the crisis? *Economic Bulletin and Financial Stability Report Articles and Banco de Portugal Economic Studies*
- [23] Tavares F.O, Pereira, E. T., & Moreira, A.C. (2014). The Portuguese Residential Real Estate Market. An Evaluation of the Last Decade. *Panaeconomicus*, 6, 739 – 757.
- [24] Luo J., Pereira R., & Lopes Dias A. (2020). An Empirical Investigation of the Portuguese housing Prices (2004-18). *Journal of Reviews on Global Economics*, 9, 47 - 67.
- [25] Taltavull de La Paz, P. & White, M. (2012). Fundamental drivers of house price change: the role of money, mortgages, and migration in Spain and the United Kingdom. *Journal of Property Research*, 29(4), 341 – 367.
- [26] Pagés, J.M, & Maza, L.Á. (2003). Analysis of House Prices in Spain. *Banco de Espana, Documento de Trabajo nº0307, Working Paper Series*.
- [27] Ayuso, J., Bianco, R. & Restoy, F. (2006). House prices and real interest rates in Spain. *Banco de Espana. DG Economics, Statistics and Research, Documentos Ocasionales. N.º 0608 2*.
- [28] Cuestas, J.C. (2016). House prices and capital inflows in Spain during the boom: evidence from a cointegrated VAR and a Structural Bayesian VAR, *Documentos d Economia y Finanzas Internacionales. Working Papers on International Economics and Finance*, DEFI 16-11 December 2016. ISSN: 1696-6376.
- [29] Meliveo, J. (2014). Tax incentives and the housing bubble: the Spanish case. *Universidad Complutense de Madrid. Dpto. Fundamentos del Análisis Económico II, Grado en Economía*, June 2014,
- [30] García-Vaquero, M.L., & Pagés, M. (2005). Taxation of housing in Spain. *Bank of Spain, Documentos Ocasionales, No 0506*.
- [31] Caliman, T., & di Bella, E. (2010). Spatial Autoregressive Models for House Price Dynamics in Italy (July 19, 2010). Available at SSRN: <https://ssrn.com/abstract=1645156> or <http://dx.doi.org/10.2139/ssrn.1645156>
- [32] Nobili, A., & Zollino, F. (2017). A structural model for the housing and credit market in Italy. *Journal of Housing Economics* 36, 73 – 87
- [33] Casolaro L., & Fabrizi, C. (2018). House prices in local markets in Italy: dynamics, levels and the role of urban agglomerations. *Bank of Italy, Questioni di Economia e Finanza, Occasional Papers, Nr 456*.

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- [34] Katrakilidis, C., & Trachanas, E. (2012). What drives housing price dynamics in Greece: New evidence from asymmetric ARDL cointegration. *Economic Modelling*, 29, 1064 – 1069.
- [35] Brissimis S., & Vlassopoulos, T. (2009). The Interaction between Mortgage Financing and Housing Prices in Greece. *The Journal of Real Estate Finance and Economics*, 39, 146 – 164.
- [36] Kapopoulos, P., Rizos, A., & Zekente, K.M. (2020). The rise, fall and revival of the residential property market in Greece: Bringing new drivers of house price fluctuations to the foreground. *Alpha Bank Economic Research, Insights*, January 2020.
- [37] Filippakopoulou M., & Potsiou, C. (2014). Research on residential property taxation and its impact on the real estate market in Greece. *Survey Review*, 46, 333 - 341.
- [38] Sivitanides, P. (2015). Macroeconomic Influences on Cyprus House Prices. *Neapolis University of Paphos (NUP)*, Working Papers Series 2015/8
- [39] Pashardes P., & Savva, C. (2009). Factors Affecting House Prices in Cyprus: 1988-2008. *Cyprus Economic Policy Review*, 3(1), 3 – 25.
- [40] Savva, C. (2015). House price dynamics and the reaction to macroeconomic changes: The case of Cyprus. *Cyprus Economic Policy Review*, 9(2): 79 - 90.
- [41] Platis, S. & Orphanides, S. (2005). Factors that shape house prices in Cyprus (in Greek). Monograph, *BuySell Cyprus Real Estate*.
- [42] Egert, B., & Dubravko, M. (2007). Determinants of house prices in central and eastern Europe. *BIS Working Paper, No 236*, Sept. 2007.



# Barnevernspedagoger: Norwegian Term for Child Care Workers

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## Abstract

This review study gives an insight into the Norwegian concept of social pedagogy. First, the study mentions the term Milieu workers. The next part of the study deals with the Scandinavian concept of social pedagogy, emphasizing the authors who influenced contemporary Norwegian social pedagogy. The study distinguishes three basic terms, i.e. social pedagogy, social work and social policy. It mentions the classification and definition of the four basic occupations in the social field according to the Norwegian Union of Social Educators and Social Workers, i.e. Sosionomer (Social Workers), Barnevernspedagoger (Child Care Workers), Vernepleiere (Social Educators), Velferdsarbeidere (Welfare Officers). The study addresses in more detail the concept of Barnevernspedagoger (BiA), a term for an educators in social care for children. These educators are experts in child social care and are trained to understand the life situations of children and adolescents at risk and of their families and to be able to deal with them, communicate, advise them in crises and handle their difficult life situations based on this understanding. The study points out the important role of BiA, their professional competences and professional ethics, which forms a significant part of their professional practice.

**Keywords:** Social pedagogy, Barnevernspedagoger, Norwegian Union of Social Educators and Social Workers

## 1. INTRODUCTION

Social pedagogy in the professional Norwegian context of childcare combines the Scandinavian and European traditions with the British and American traditions of social work. At the same time, it has developed as an integrated element within the Norwegian welfare state organization and is influenced by the development of state policy, changes in practice and theory. Social pedagogy is a subject and practice that formulates and applies pedagogical solutions to social problems, at the same time it has a preventive role, because it tries to prevent the emergence of problematic situations in the first place. Social pedagogical work is not limited to solving problematic situations. The professional function of social pedagogy is to maintain well-being and standard of living, and from this function social pedagogical work acquires its strongly preventive meaning and content [1].

Caring for a positive psychosocial climate is an important aspect of socio-pedagogical work. Educators in the field of social care for children mostly work with disadvantaged children and their families, they are often perceived as outpatient specialists in such facilities as children's homes, after-school clubs, child psychiatry or educational institutions. In these conditions, the child welfare educator is expected to exhibit human qualities such as empathy, the ability to achieve respect, mutual understanding and the ability to build constructive relationships, which are the main principles set out in the Norwegian National Framework for the Education of Child Welfare Pedagogues [2].

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The review study focuses on the Norwegian concept of the social educator. In the Norwegian context, we can find the term "Milieu therapists" or "Milieu workers" (see Tab. 1), e.g. socio-pedagogical work in after-school clubs, which is very popular in Norway and aims to foster pro-social, cooperative relationships between young people, regardless of what problems they may have or not. The idea is that a welcoming environment "censors" antisocial behavior and "rewards friendly interaction" [3].

Tab. 1 Brief characteristics of the term "Milieu Therapy"

<b>Definition: Milieu Therapy</b>	Milieu therapy is a safe, structured and group method for individuals with mental health problems. This therapy involves the use of daily activities that help individuals interact in a community setting. Milieu therapy is a flexible intervention and helps people shape their problematic behaviors. During the process of therapy, values are formed that become a collective responsibility for each participant in the community.
<b>Meaning of the Word "Milieu"</b>	The word milieu comes from the French word milieu, which means center. The English meaning of the word is the environment. In a therapeutic context, it refers to the overall environment and environmental interactions. A therapeutic environment is defined as the scientific structuring of the environment with the aim of influencing behavioural changes and improving the psychological health and functioning of an individual [4].
<b>Historical Context</b>	The term "Milieu Therapy" was coined in Germany at the beginning of the 20th century to describe a new hospital treatment for psychiatric patients. A key element of this therapy was the active role of the caregivers in working with patients. The predecessor of this type of treatment was the so-called moral treatment developed at the end of the 18th century, which marked the beginning of the kind and humane treatment of psychiatric patients, and its founder Pinel created a revolution in his time by urging that the mentally ill be treated with compassion and understanding [5].
<b>Objectives of Milieu Therapy</b>	Therapy is intended to motivate the individual to feel sufficient to express himself. Socializing with others helps to get immediate feedback, and proper feedback can have a positive impact on changes in the lives of people with various problems.
<b>Milieu and Personal Values</b>	During therapy, participants are encouraged to maintain personal values, as personal values are fundamental in therapy. Examples of personal values: Self-confidence, self-awareness, and good manners. Therapy promotes collective interests, and shared interests help members discover how their behavior affects others. This type of therapy promotes a sense of responsibility in each individual [6].

## 2. SCANDINAVIAN CONCEPT OF SOCIAL PEDAGOGY

Englung [7] points to the developmental context of educational research in the 20th century, when other auxiliary sciences such as psychology and sociology were gradually added to pedagogical philosophy. However, throughout the first half of the 20th century, psychology had a dominant influence, and the subject of study of pedagogy was at the individual level with an interest in the development of learning.

Since the beginning of the 70s of the last century, in Scandinavia, slogans such as dialogue pedagogy, alternative pedagogy, social pedagogy, critical pedagogy and contextual pedagogy have often been used in discourses on education. Over the next few decades, these terms changed.

The initial approach to the concept of social pedagogy can be considered the Swedish professor Bertil Hammer. At Uppsala, Hammer had a wide range of interests, including sociology, history, and philosophy. Hammer's classification of the field of education as an academic discipline [8] can be considered very stimulating, i.e.:

- Field of Philosophy of Education: To examine the subject of education.
- Field of Educational Psychology or Individual Pedagogy: To study in depth the educational process as it shapes the individual. Examine the biological and psychological conditions that determine the development of a child.
- Social pedagogy and school history: To study pedagogy as a social phenomenon, it is necessary to point out historical and social conditions.

In 1961, the Institute for Research on Education at the University of Oslo organized an international congress on the topic "The Role of Educational Research in Social Education". At the congress it was stated that social education is an essential part of education and in the 70s of the last century social pedagogy began to develop as an independent area of pedagogy [9]. Although in the 70s of the last century there were discourses on the concept of social pedagogy in Norway, it was still perceived as a search for an overall intellectual program of education for disciplines such as sociology and social theory, which are perceived as the dominant source for the development of pedagogical

knowledge [10]. In this early period, a large number of discursive articles were published in national journals or influential journals (see Tab. 2).

Tab. 2 Leading Voices in Social-Pedagogical Discourse: Authors Who Further Influenced the Norwegian Social Discourse Pedagogy (modified according to Jarning [11]).

1971	<ul style="list-style-type: none"> <li>Christie: Bestseller in the New Sociology of Education in Scandinavia – If Schooling Did Not Exist.</li> <li>Kvale: Critical Research of Academic Examinations.</li> </ul>
1972	<ul style="list-style-type: none"> <li>Dale: Dale's rejected Master's thesis with a title <i>Pedagogikk og samfunnsforandring</i> (Education and social transformation).</li> </ul>
1973	<ul style="list-style-type: none"> <li>Translations of great books on education and pedagogy by Freire and Illich.</li> </ul>
1975	<ul style="list-style-type: none"> <li>Hellesnes: Philosophical Reflections on Education.</li> <li>Negt: Translation of the didactic work "Soziologische Phantasie und exemplarisches Lehren" (didactic writings containing strong links between social theory and cultural analysis of Marxism and didactics, the theoretical and practical core of the discipline of education in Germany and the Scandinavian tradition).</li> </ul>
1976	<ul style="list-style-type: none"> <li>Skjervheim: Philosophical reflections on education.</li> </ul>
1978	<ul style="list-style-type: none"> <li>Høem's dissertation: Education in Sami areas in northern Norway, so-called "sosialisering", points to an understanding of how harmonious or conflictual relationships affect typical patterns of school socialization outcomes. The relational understanding of the interaction of socialization in the family and at school opens the way for constructive didactic use, for reforms of the institutional environment and curriculum content with the intention of reducing conflicting patterns of interaction between local culture and education in peripheral areas.</li> <li>Solstad: Locally directed approaches in school development and building didactic theories.</li> </ul>

It should be added that social pedagogy in Norway also has roots in the academic professional tradition, where the academic origin of the discipline can be traced back to the 70s of the 20th century at the University of Oslo, where a group of radical academics established a course in social pedagogy as an alternative to the existing program of pedagogical studies. A critical voice from the University of Oslo has shifted social pedagogy into a discipline based on the care profession debate.

Social pedagogy, respectively social education in Norway, was established for the needs of public care for children and adolescents at risk. From 1949, courses focused on child protection were organized, and in 1951 the first education on child protection was established, which was intended for directors of children's homes. In 1953, the Act on the Protection of Children was adopted, which subsequently led to the extension of the course on child protection, which became a two-year course and was also aimed at employees of institutions for the social and legal protection of children, boarding schools of special schools and psychiatric treatment institutions for children and youth. In 1968, the professional title "Child Care Worker" was introduced. In 1982, the first National Framework Plan for the training of educators of child welfare was adopted and education became a three-year university education. Since 2001, a new degree structure has been introduced and a child care worker has been qualified through a bachelor's degree in child protection (see Tab. 3).

Tab. 3 Higher Education in Norway: Bachelor's Degree in Child Protection and Master's Degree – Specialization (modified according to FO [12]).

<b>Bachelor's Degree in Child Protection</b>	3-year full-time study as well as 4-year combined study at 11 universities.
National Framework Plan and Regulations for Bachelor's Studies	(Last revised standards in 2005). Individual educational institutions are free to determine the structure and organisation of studies through the subject plan.
Subjects and Practice in	Education is broadly composed of subjects of social sciences, law, psychology, pedagogy and ethics.

Bachelor Studies	<p>Subjects and practice within the framework of social pedagogical work with children and youth make up more than a third of the study. It provides an introduction to professional roles, ethics, communication, conflict resolution, child protection measures, working with groups, organizations and networks.</p> <p>Vocational education prepares students for work in direct relationship with children, youth and their families. Education is discipline-integrated and the central element is the focus on linking theory and practice through guided practice and training of communication skills.</p>
Main subject – Social Pedagogy in Bachelor Study	<p>Social pedagogy provides both theoretical perspectives and methodological approaches for the work of educators in the field of childcare.</p> <p>Social pedagogy is perceived as the study of how psychological, social and material conditions and various value orientations support or hinder the overall development and growth of an individual or group, quality of life and well-being.</p> <p>Social pedagogy focuses mainly on the development, learning and belonging of children and young people.</p>
The Basis of Education in the Bachelor's Programme is...	<p>Respect for life, respect for human dignity and solidarity with people and groups in endangered life situations.</p> <p>An important basis of this profession is The United Nations Convention on the Rights of the Child.</p>
Master's Degree - Specialization	<p>Specialization in the fields: environmental therapy, child protection, family therapy, psychosocial work with children and youth, mental health care for children and youth, work with substance abuse, social work, work with mental health.</p>

### 3. SOCIAL PEDAGOGY, SOCIAL WORK AND SOCIAL POLICY

Social pedagogy relies on social work, so it is necessary to be clear about the similarities and differences between social pedagogy and social work. For a brief outline, we start from Hämäläinen [13], who offers connections between social pedagogy and social work. To these relations is added a third category, namely social policy, which Herrmann emphasises [14]. Herrmann's concept of the so-called "ideal types" of social areas that overlap depending on the specific context (see Tab. 4).

Tab. 4 Herrman's Conception of Social Areas (modified according to Herrmann [15]).

	Social pedagogy	Social work	Social policy
<b>Target activity</b>	<p>Personality development.</p> <p>Reducing "conflicting borders".</p> <p>Developing individual potential and success.</p>	<p>Orientation towards social exclusion and disadvantage.</p> <p>Application of the medical-psychological model with an emphasis on self-support.</p> <p>Auxiliary intentions.</p>	<p>Labour market.</p> <p>Essential for social integration.</p>
<b>Activities</b>	<p>Personal development through communication activities.</p>	<p>Individual adaptation or local solutions.</p> <p>Social projects.</p>	<p>Job creation – focused on demand and increasing employment.</p>
<b>Strategy</b>	<p>Pedagogical strategy.</p> <p>Empowerment of individuals.</p> <p>Educational direction.</p> <p>Preconceived notions of the "good individual" and the "good company."</p>	<p>Labour market.</p> <p>Qualification and community development.</p> <p>Work with individuals or groups.</p>	<p>Economic and regional strategy.</p> <p>Social welfare strategies.</p> <p>Further training and retraining.</p>

#### 4. NORWEGIAN UNION OF SOCIAL EDUCATORS AND SOCIAL WORKERS

In November 1992, the Norwegian Union of Social Educators and Social Workers (Fellesorganisasjonen, hereinafter referred to as FO) was formed, which is a voluntary professional association and trade union with approximately 33 000 members. The association recruits "Sosionomer" (social workers), "Barnevernspedagoger" (child care workers), "Vernepleiere" (social educators) and "Velferdsarbeidere" (welfare officers). Members of these professions have at least a bachelor's degree. Table 5 provides an overview of professions in the social area according to the FO.

Tab. 5 Characteristics of Professions in the Social Area Modified According to FO [16].

Norwegian name	English name	Brief characteristics
Sosionomer	Social Workers	The social worker must prevent, solve and reduce social and health problems.  It helps children, young people, adults, families, groups and local communicatives in their efforts for better living conditions.
Barnevernspedagoger	Child Care Workers	The social mandate of educators in the field of social care for children is connected with ensuring and improving the conditions of adolescence of children and young people at risk.  The work involves ensuring that the child's perspective is protected and made visible in the things that affect their lives.
Vernepleiere	Social Educators	The care profession is the only profession where health and social sciences intersect.  Social educator has a unique competence that can be used in several services.
Velferdsarbeidere	Welfare Officers	Welfare officer works with working life at an individual, group, organizational and social level.  Welfare officer has special expertise across sectors within disciplines such as social promotion, areas of occupational inclusion and in how to adapt daily working life to employees with reduced functional capacity or illness, knowledge of law and social administration, economics and sociology. Furthermore, this worker has expertise in personnel work and project work.

##### 4.1. Professional Ethics as an Important Part of the Professional Practice of a Child Care Worker

The professional experience of child care workers, but also of all social workers, is based on humanistic and democratic values. These professionals must promote equality, respect, be mindful of people's needs and create the quality of life of each individual. Solidarity with vulnerable groups, the fight against poverty and for justice are important elements of the identity of professional groups in the social field. The Code of Ethics is the basic document of professional ethics and represents binding shared values for professions in the social sphere, discusses selected

ethical challenges (see Tab. 6) and problem areas, and specifies reactions and sanctions in situations where an individual professional practitioner or collegial community shows poor judgment or commits an ethical violation.

Tab. 6 Professional Ethical Challenges in Social Work (modified according to FO [17]).

<b>Meeting People</b>	<p>In human interaction, everyone will influence what happens and the way a professional meets individuals, colleagues or groups is critical to how services and assistance are performed, understood and received.</p> <p>Professionals must be aware of how they affect the balance of power in a relationship as a professional party and that professional power can be abused.</p>
<b>Discretion and Challenges</b>	<p>Health and social work requires professionals to have moral judgment and the ability to distinguish between the essential and the irrelevant, to assess different aspects of complex situations, and to consider different interests and considerations.</p> <p>Judgment also sums up the courage to make decisions, even when no solution seems ideal.</p> <p>Good professional judgment must be based on the best investigation of the situation and the perspectives of all involved must be taken into account.</p> <p>Professionals are responsible for discussing ethical dilemmas with users and colleagues, and for seeking advice when they themselves are in doubt.</p>
<b>Dialogue and Cooperation</b>	<p>A comprehensive and well-coordinated range of services is based on good relations between professional practitioner and user and on constructive cooperation between the participating professions, agencies, etc.</p> <p>A professional should work together towards common goals.</p>
<b>Loyalty</b>	<p>A professional has a social responsibility to take care of various interests.</p> <p>It is a requirement that the various services and individual professionals be loyal to the management and decisions, including in terms of organizational and financial frameworks.</p> <p>A professional practitioner may find himself between different responsibilities and may come into conflict with loyalty, e.g. there is a conflict of interest between parents and the interests of children. Employee safety can also conflict with users' need for help and care.</p>
<b>The Professional Practitioner must be able to Distinguish between Law and Needs</b>	<p>The courage to speak up and the ability to professionally and ethically argue for decisions, i.e. to stand up for decisions that are made and put into practice.</p>
<b>Strength and Violation</b>	<p>Health and social work involves the exercise of power, authority, and social control.</p> <p>The professional makes decisions and evaluations that can have serious consequences for the life of the user.</p> <p>Professionals manage resources and regulations, which means that a person who needs help can become dependent on a professional practitioner.</p> <p>Professionals must use their power and influence to help users visualize their needs and the responsibilities they have, i.e. Users/Klients must be able to mobilise their resources so that they can influence and take responsibility for their own lives as much as possible.</p>
<b>Openness, Information and Alerts</b>	<p>Through his work, the expert is aware of situations that are the impetus for problems of individuals or groups, and therefore has a moral responsibility to make these situations public.</p> <p>The professional has a responsibility to make society aware of situations that createsocial problems and contribute to social exclusion or are risky for living conditions.</p> <p>Publicly employed experts have a duty to inform political decision-makers through official channels, as the welfare state in Norway is based on values, ethical challenges that are linked to social policy issues.</p>

4.2. Focus on the Term "Barnevernspedagoger"

Society is constantly changing, which affects the conditions in which children and adolescents grow up. It shows that there is an increasing number of children and adolescents in need of social and mental health services. Educators in the field of childcare, so-called. Barnevernspedagogers (hereinafter referred to as BiA) are trained to understand the life situation of vulnerable children, young people and families and to be able to act and communicate with them on the basis of this understanding. Creating good conditions of care, belonging and participation for children and adolescents are the main goals of this profession. BiA competence in Norway is constantly developed in accordance with the needs of vulnerable children and adolescents. However, this requires a dynamic approach to the competences and knowledge of educators [18].

The field of work of these educators is extensive and diverse. BiAs work with care, prevention and conflict resolution. It tries to find good solutions for children and adolescents who have social and psychological problems or who are at risk of their development. Among the important qualities of these educators is the ability to build trust, which is probably the most important prerequisite for becoming a BiA. Trust is important for reaching contact with children and adolescents in crisis. Everyday work in the field of child welfare places high demands on the educator both professionally and ethically, and the educator must have good cooperative skills and be able to manage conflicts well [19]. These educators can work as:

- Managers and environmental therapists in all areas of the child care sector.
- Head of the institute or environmental therapists in psychiatry for children and adolescents.
- Head of the institute or environmental therapists in institutions for drug addicts.
- Environmental therapists at school.
- As part of preventive work with children and adolescents.

It is worth mentioning the fact that Norway has its own education, which is qualified to work with children in vulnerable life situations, which shows how the values of childhood are recognised in Norway [20]. Authors Dimmen and Trædal [21] are of the opinion that the professional development of BiA is a complex process, as the integration of different types of knowledge is complex and takes time. BiA should not overly believe that initiatives to develop professional competences will lead to rapid changes in practice.

BiA work means contact with children and families with various problems, such as drug addiction, mental illness, behavioral problems or poverty. In addition, BiA must have a good knowledge of topics such as law, public administration and communication. However, each area requires extensive knowledge, the learning of which takes time. In BiA's work, they may encounter unsolvable dilemmas, where the conclusion may bring with it some negatives. For this reason, it is important that BiA continuously develops its professional competencies and is equipped to face difficult situations. In BiA's work, Dimmen and Trædal emphasize reflection, which they perceive as important, and argue that if BiA is to be able to transmit practical knowledge, it must first become aware of its actions, which is particularly important because BiA has high demands that it must be able to reflect. The perception and meanings of reflection according to the authors are modified in the following Tab. 7.

Tab. 7 Reflection in BiA work (modified according to Dimmen and Trædal [22]).

<b>Characteristics of Reflection</b>	<p>Constant reflection is the most important aspect of professional development.</p> <p>Reflection is something we do to create meaning or change our understanding of what happens when something surprises us. Reflection can help us see things from several sides and challenge us to our own values and understandings.</p> <p>Reflection helps us to participate in our own thoughts and our own arguments, it also helps us to gain new perspectives, which can contribute to making us more confident in our assessments.</p>
<b>Reflection and Mobilisation of Expertise</b>	<p>Putting practical knowledge into words can be seen as a way of mobilizing expertise, since reflection is a structured activity that can contribute to such mobilization.</p>
<b>Reflection in Child Protection Service</b>	<p>Reflection can take place both individually and in groups.</p> <p>Commonly used counseling programs that involve reflection as a more or less structured activity.</p> <p>Reflection is a form of work that can contribute to the development of new knowledge by taking a closer look at actions and their consequences.</p>

<b>Joint Reflection with Colleagues</b>	Joint reflection with colleagues is an important tool for developing a sense of belonging.
<b>Continuous Reflection</b>	Continuous reflection allows BiA to build readiness for action. BiA is thus better prepared for possible ways of acting in situations in which it finds itself (it can also be a way of coping with stress).
<b>Benefits of Reflection</b>	Reflection is an important tool for the development of practical knowledge and can lead to better services, in addition, it contributes in community with colleagues, which can inspire and further motivate to develop professional skills.  Reflection can be seen as an important tool for supporting the mobilisation of expertise.

Reflection in BiA work is important because the educator encounters ethically demanding situations in his work and reflection helps him to correctly step into other situations that are a challenge in everyday working life. FO [23] compiled three important aids during reflection in practice, i.e.:

- **Learning from the past:** The challenge is to try to understand what happened in the past situation and learn from it or to follow up on the choices that did not end happily and re-evaluate them. Decisions and procedures can sometimes be changed, sometimes regretted, but all mistakes can always be learned and then the educator must dare to speak, discuss and reflect on challenging situations.  
BiA should answer the questions: What caused me to be uneasy or negative? What if I haven't listened to someone enough? Have I overlooked something that might affect the assessment of the situation? What if I judged too quickly and which of my considerations carry more weight? Which decisions did I not take into account?
- **Securing future elections:** At best, the BiA should talk about difficult situations before deciding to act, because the better the situation is mapped, the more certain it is that the benchmark and the values and considerations have been classified and taken into account, the greater the chance that the decisions taken will actually help those in need. Social work is a moral practise, therefore it aims to improve people's well-being, and professional challenges can therefore never be separated from ethical ones. Procedures and measures must therefore be combined with the application of discretion. Ethical reflection should help to ensure the quality of social work so that the help is really helpful and not perceived as offensive.  
BiA should answer the questions: When can an exception to the rule be justified? Whose wishes should be given more consideration? What measures would be most appropriate for the user in question? What do I want to achieve? What is important for the rest involved? What can go wrong?
- **Ethical reflection as a joint project:** In the basic document of FO professional ethics, it is recommended that ethical challenges be discussed both with users and with colleagues and partners. The more experience and perspectives BiA gains through reflections with others, the better equipped it will be to face new situations.

4.3. The Role of the Educators in the Field of "Barnevernspedagoger"

Table 8 characterises the necessary skills and abilities that BiA should have according to the Norwegian FO [24]. The role of BiA lies in its good knowledge:

- the physical, psychological and social development of children and young people;
- also knowledge of the family and local environment;
- knowledge of actors related to personal, social, economic, political and cultural conditions;
- also knowledge of the different types of methodology that promote adequate conditions for the growth of children and adolescents;
- knowledge of the current state of research and development of research methods.

Tab. 8 BiA requirements (modified according to FO).

<b>Relationship and Interaction</b>	The work of change takes place in relationships and through interaction between people.  BiA's work takes place in direct contact with children, youth and their families and surroundings.
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	<p>BiA should have the ability to establish and maintain constructive relationships in various situations.</p> <p>BiA should work in relationships and resolve conflicts of interest.</p>
<b>Analytical Skills</b>	<p>Professional knowledge and understanding are related between the social structures, social and psychosocial problems of children, adolescents and their families.</p> <p>The focus of BiA is on the development and learning of children and adolescents, while BiA should create conditions for the development of the individual and his learning.</p> <p>BiA should also be concerned with what promotes or hinders the good conditions for the growth of the child or adolescent.</p>
<b>Professional Judgment and Solution-Oriented Practice</b>	<p>BiA works with complicated family relationships.</p> <p>BiA seeks adequate solutions that are in the best interests of the individual child or adolescent.</p> <p>BiA applies its professional competence and discretion in relation to children, youth and families.</p> <p>BiA ensures the child's perspectives.</p>
<b>Environmental Therapeutic Work</b>	<p>Focused on the systematic arrangement of physical, psychological and social factors in the environment in order to promote personal growth and development of the individual.</p> <p>To provide the individual with the greatest possible degree of self-determination and to provide him with safe conditions of growth.</p> <p>BiA performs work in the everyday environment of children and adolescents, such as schools, after-school centres, kindergartens, leisure facilities and various services and institutions where children and adolescents stay 24 hours a day.</p>
<b>Managerial Knowledge</b>	<p>BiA has a lot of information about general administrative principles, laws that deal with children and adolescents.</p> <p>BiA cares about the needs and rights of children and adolescents.</p> <p>BiA has a view to the main objectives and means of operating in the policy of children and adolescents.</p> <p>BiA has an overview of the support system aimed at children and adolescents and their families.</p>
<b>Ethical and Political Perspectives at Work</b>	<p>BiA respects and is related to the basic document of professional ethics of FO.</p> <p>BiA should be able to get along with individuals with respect and empathy.</p> <p>BiA is aware that equality and respect are the basic prerequisites for professional practice.</p> <p>BiA provides assistance, carries out checks, conducts ethical evaluations, critically thinks about its own professional practice, professionally and ethically justifies its decisions and actions.</p> <p>BiA critically assesses the conditions for upbringing of children and adolescents.</p>
<b>Style of Work of BiA</b>	<p>Styl of work of BiA is focused on application of the theory and methods of social pedagogy, which aim to increase the personal and social competence of children and adolescents at risk.</p> <p>Based on a holistic understanding of the situation of children, adolescents and family, on which both individual and social, cultural and material factors are included.</p> <p>Based on a comprehensive understanding and on the basis of the protection of the interests of the child, goals and action plans are created for the work to be done.</p> <p>The work is evaluated and developed in cooperation with those concerned.</p>

	Exploiting the opportunities that lie in interdisciplinary cooperation.
	Hold roles from coordinator to responsibility for performed therapeutic work related to the client.

## 5. CONCLUSION

A review study first looked at the term Milieu Workers, referring to socio-pedagogical work in extracurricular clubs, which is increasingly popular in Norway and aims to build pro-social, cooperative relationships between adolescents and create a friendly environment to prevent the development of antisocial behaviour. In the next part, the study focused on the Scandinavian concept of social pedagogy, highlighting leading voices in the social-pedagogical discussion and authors who influenced the development of Norwegian social pedagogy, such as Christie, Kvale, Dale, Hellesnes, Negt, Skjervheim, Höem a Solstad. The study outlined the historical context of social pedagogy in Norway and pointed to the development of education of workers in the field of child protection, when the academic environment in the 70s of the 20th century at the University of Oslo drew attention to the need to develop public care for vulnerable children and adolescents. We also focused on Norwegian university studies in child protection, including the teaching of the main subject of social pedagogy. The study analyzed three fundamental concepts such as social pedagogy, social work and social policy, especially the study presented Herman's concept of social areas. The study highlighted the classification of four important professions in the social field according to the FO and specifically dealt with the term Barnevernspedagoger (BiA). BiA also works with children and adolescents who are endangered by risky behaviour or social exclusion. The study did not neglect professional ethics as an important aspect of the professional practice of educators in the field of child welfare. In this section, we point out seven challenges among the professional ethicists, i.e. 1. Meeting people, 2. Discretion and challenges, 3. Dialogue and cooperation, 4. Loyalty, 5. Ability to distinguish the rights and needs of clients, 6. Strength and will, 7. Openness, information and alerts. The study emphasized reflection in BiA work, classifying it into individual sections, i.e. characteristics of the concept, reflection and mobilization of expertise, reflection in child protection service, joint reflection with colleagues, constant reflection and contribution of reflection in BiA work. Reflection is an important activity during the work of the BiA, which is highlighted by the FO, which has compiled three important aids during reflection in practice, these are learning from the past, securing future elections and ethical reflection as a common project. The study looked at the role of the educator in the field of BiA, which consists of good skills and knowledge, e.g. knowledge of the social development of children and adolescents, family and local environment, knowledge of economic, political and cultural character and knowledge of current research methods. The requirements that are placed on BiA are related to direct contact with children, adolescents and their families, but also to BiA's ability to establish constructive relationships and solve various crisis situations. Other BiA requirements include analytical skills, professional judgment and solution-oriented practice, environmental therapeutic work, managerial knowledge, ethics and knowledge of legislation, the ability to create action plans for work and the pursuit of interdisciplinary cooperation, as well as holding a role from coordinator to responsible therapeutic work.

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## References

- [1] Stephens, P. (2013). *Social Pedagogy: Heart and Head: Studies in Comparative Social Pedagogies and International Social Work and Social Policy*, Vol. XXIV. Bremen: Europäischer Hochschulverlag GmbH & Co. KG.
- [2] Stephens, P. (2009). The nature of social pedagogy: An excursion in Norwegian territory. *Child & family social work*, 14(3), p. 343-351.
- [3] Stephens, P. (2013). *Social Pedagogy: Heart and Head: Studies in Comparative Social Pedagogies and International Social Work and Social Policy*, Vol. XXIV. Bremen: Europäischer Hochschulverlag GmbH & Co. KG.
- [4] Belsiyal, C. X., Rentala, S., & Das, A. (2022). Use of therapeutic milieu interventions in a psychiatric setting: a systematic review. *Journal of Education and Health Promotion*, 11.
- [5] Hoffman, L. (1982). An Historical Overview of Milieu Therapy. In: *The Evaluation and Care of Severely Disturbed Children and Their Families*. Springer, Dordrecht.

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- [6] WebMD Editorial Contributors. *Mental health: What is milieu therapy?* [online]. WebMD, LLC., 19.07.2023. [cit. 25.08.2023].
- [7] Englund, T. (2006). New trends in Swedish educational research. *Scandinavian journal of educational research*, 50(4), p.383-396.
- [8] Jarning, H. (1997). The Many Meanings of Social Pedagogy: Pedagogy and social theory in Scandinavia. *Scandinavian Journal of Educational Research*, 41(3-4), p. 413-431.
- [9] Jarning, H. (1997). The Many Meanings of Social Pedagogy: Pedagogy and social theory in Scandinavia. *Scandinavian Journal of Educational Research*, 41(3-4), p. 413-431.
- [10] Jarning, H. (1997). The Many Meanings of Social Pedagogy: Pedagogy and social theory in Scandinavia. *Scandinavian Journal of Educational Research*, 41(3-4), p. 413-431.
- [11] Jarning, H. (1997). The Many Meanings of Social Pedagogy: Pedagogy and social theory in Scandinavia. *Scandinavian Journal of Educational Research*, 41(3-4), p. 413-431.
- [12] Fellesorganisasjonen. (2016). *Barnevernspedagogen – utdanningen og profesjonen*. [online]. FO, October, 2016. [cit. 25.08.2023].
- [13] Stephens, P. (2013). *Social Pedagogy: Heart and Head: Studies in Comparative Social Pedagogies and International Social Work and Social Policy*, Vol. XXIV. Bremen: Europäischer Hochschulverlag GmbH & Co. KG.
- [14] Stephens, P. (2013). *Social Pedagogy: Heart and Head: Studies in Comparative Social Pedagogies and International Social Work and Social Policy*, Vol. XXIV. Bremen: Europäischer Hochschulverlag GmbH & Co. KG.
- [15] Stephens, P. (2013). *Social Pedagogy: Heart and Head: Studies in Comparative Social Pedagogies and International Social Work and Social Policy*, Vol. XXIV. Bremen: Europäischer Hochschulverlag GmbH & Co. KG.
- [16] Fellesorganisasjonen. (Undated). *Norwegian Union of Social Educators and Social Workers (FO)*. [online]. FO, Undated. [cit. 25.08.2023].
- [17] Fellesorganisasjonen. (2021). *Yrkesetisk grunnlagsdokument for barnevernspedagoger, sosionomer, vernepleiere og velferdsvitere*. [online]. FO, 17.08.2021. [cit. 25.08.2023].
- [18] Fellesorganisasjonen. (Undated). *Hva er en barnevernspedagog?* [online]. FO, Undated. [cit. 25.08.2023].
- [19] Utdanning.no. (Undated). *Barnevernspedagog*. [online]. Utdanning.no: Offentlig og kvalitetssikret, Undated. [cit. 25.08.2023].
- [20] Akademikerforbundet. (Undated). *Barnevernspedagogene – tenker stort om de minste*. [online]. Akademikerforbundet, Undated. [cit. 26.08.2023].
- [21] Dimmen, A. S., Tædal, F. (2019). Barnevernet, en arena for læring. *Barnevernspedagogen – Nær og profesjonell*. Fellesorganisasjonen. p.37-44.
- [22] Dimmen, A. S., Tædal, F. (2019). Barnevernet, en arena for læring. *Barnevernspedagogen – Nær og profesjonell*. Fellesorganisasjonen. p.37-44.
- [23] Fellesorganisasjonen. (2019). *Hjelp til etisk refleksjon i praksis*. [online]. FO, 15.11.2019. [cit. 25.08.2023].
- [24] Fellesorganisasjonen. (2016). *Barnevernspedagogen – utdanningen og profesjonen*. [online]. FO, October, 2016. [cit. 25.08.2023].

# Relationship between Emotional Engagement and Academic Achievement - A study among business students in Tirana Economic Faculty

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## Abstract

Making effective investments in student's education is critical for developing the human capital. Engagement is a key factor in student's personal and academic achievement. The purpose of this study is to investigate the relationship between emotional engagement and academic achievement among business students of the Economic Faculty, University of Tirana, Albania. A sample of 196 bachelor and master students were included in this study. The questionnaire was self-administered by Google form and was distributed through the online platform used by the university. The construct of the independent variable consists of 12 closed questions by Likert-type scale. The reliability of the construct of the independent variable was analyzed and Cronbach's alpha was 0.838, which implies that the data set contains a high acceptable level of reliability. From the analysis, was found a statistically significant moderate positive correlation ( $r=.225$ ,  $N=196$ ,  $p<.05$ ) between emotional engagement and academic achievement among the business students. From the regression analysis, a significant relationship was found between emotional engagement and academic achievement, where a point of change in emotional engagement would increase academic achievements by 0.349 ( $\beta=0.349$  for  $p<0.05$ ). Other variables included in the study, such as gender or work relationship, were not found to be significant for this relationship. Meanwhile, the academic cycle and year of study are significant and have a negative impact. This means that is a significant difference between Bachelor and Master students and the more the age of students and their academic years increases, the less the influence of emotional on academic performance. The aim of the study is to enable a better understanding of student emotional engagement to frame future research and improve academic students' achievement.

**Keywords:** student engagement, education, emotional engagement, academic achievement, student grades

## 1. INTRODUCTION

The educational system in the 21st century is characterized by technological advancements and the necessity for countries to develop competent individuals who can work hard and actively engage in learning (Olana, 2022). Education has an important impact to society from raising the quality of life, to creating conditions to the development of talented individuals to contribute to society. Most educational policies focus their reform plans on school factors, even though the school is not alone responsible for the level of student's achievement and progress. The student is not alone responsible for his or her academic achievement, but rather is a system of factors that integrate together, towards raising the level of achievement or vice versa create a learning gap between the learners (Zukan & Aldulaimi, 2020).

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Engagement is seen as a key contributor of learning and academic success. First is related with universities, student engagement tends to be linked to quality, competitive advantage in the marketplace and competition for resources. Second, it is related with researchers and teachers, much interest in student engagement is linked to understand the new relationships developed between students and other institutions and to the ways in which student engagement might improve student learning experiences and outcomes (Scott, 2008); (Zhao & Kuh, 2004). A number of research has linked student engagement to higher grades, achievement test scores, and school completion rates (Fredricks, Blumenfeld, & Paris, 2004); (Wang & Fredricks, 2014). Although there has been large research in how engagement has been defined, there is some agreement that engagement is a multidimensional construct. However, literature shows that each dimension of engagement doesn't necessarily lead to the same outcomes. Therefore, there is still an ongoing debate on whether engagement's dimensions should be investigated simultaneously (Fredricks, Blumenfeld, & Paris, 2004). So, despite this widespread enthusiasm for the concept of student engagement, there is very little consensus as to its meaning or how we might measure the success of student engagement initiatives (Baron & Corbin, 2012). Little attention has been paid to students' more immediate emotional responses to their learning, so one particular area in need of greater research in higher education is the role of emotion in student engagement (Kahu, 2011). So, the study aimed to explore the unique role of the emotional subtype in influencing achievement and learning of students.

## 2. LITERATURE REVIEW

To fully understand the role of engagement in academic achievement, we need greater consensus on what engagement is. Student engagement was seen as an evolving construct that captures a range of institutional practices and student behaviors related to student satisfaction and achievement including time on task, social and academic integration, and teaching practices (Kuh, 2009a). Krause and Coates (2008), defined engagement as the extent, where students are engaging in activities with high quality learning outcomes. Students who are not actively engaged will have a risk to fail. The study conducted by Sukor et. al (2011), showed a significant positive relationship between overall student's engagements with academic performance. Multiple linear regression analysis showed that engagement domain contributed to 38.6% of variation on students' performance, hence plays a vital role in student's academic performance.

Researchers have agreed that the concept of engagement is multidimensional and is a theory that has changed its constructs over time. There are three components of engagement: cognitive, behavioral, and emotional (Fredricks, Blumenfeld, & Paris, 2004); (Appleton, Christenson, & Furlong, 2008); (Baron & Corbin, 2012); (Wang, Sharma, & Cao, 2016). Adva (2016), determined the relationship of students' cognitive, emotional and behavior engagements to academic performance and observed that all three engagements predicted academic performance. Cognitive engagement incorporates deep understanding, attention, intelligence, learning strategies, persistence on tasks, information transfer skills, thoughts, perceptions and motivation. Behavioral engagement draws on the idea of participation; it includes involvement in academic and social or extracurricular activities and is considered crucial for achieving positive academic outcomes and preventing dropping out (Fredricks, Blumenfeld, & Paris, 2004). Emotional engagement refers to students' affective reactions in the classroom, including interest, boredom, happiness, and anxiety (Connell & Wellborn, 1991). Emotional engagement, or affective engagement, is a student's awareness of their academic ability, and their ability to assess their beliefs about succeeding in an academic setting (Lovelace, Reschly, Appleton, & Lutz, 2014).

The emotional engagement construct include: students' attitudes about school, students' affective reactions in the classroom, how they identify with school and their sense of belonging, their values, positive and negative responses to school, peers, teachers, and academics (Appleton, Christenson, & Furlong, 2008); (Fredricks, Blumenfeld, & Paris, 2004). Emotional engagement involves course content, peers, positive and negative reactions to teachers and to the class which all include attitudes, interests, and values (Gunuc & Kuzu, 2014).

Some researchers assess emotional engagement by measuring emotional reactions to the school and the teacher (Lee & Smith, 1995). Based in the literature review, emotional engagement has been less well investigated, in part because indicators of this construct have often been combined with measures of behavioral or cognitive engagement (Connell, Spencer, & Aber, 1994), making it difficult to investigate the contributions to student achievement.

### *Emotional Engagement and Academic Achievement.*

Many researchers have defined academic achievement in various ways. Kuh et al. (2006) has identify academic achievement as student success, abilities and competencies, fulfillment, procurement of craved information, persistence, achievement and post-college performance. Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university (Steinmayr, Lemmer, Wirthwein, &

Schwinger, 2014). From previous studies, academic achievement has been considered a key result of student engagement. Student achievement was also explained in Finn (1989) theory and model regarding student engagement. Finn (1989), in the Participation-Identification Model, focused on behavioral and emotional dimensions and tried to explain students’ school drop-out. His study was based on the idea that successful students identify themselves with their schools. King (2015), discovered that academic achievement was favorably connected with emotional and behavioral engagement. A study by Appleton et al. (2006), presents that emotional and cognitive engagement and its measures have an impact on the student’s academic achievements. Changes in either of these two engagements has a positive impact on the students’ academic achievement. Also the study conducted by Lee (2014), it was observed that students’ reading performance was significantly predicted by both emotional and behavioral engagements. In Ketonen et al. (2016) study, academically engaged students have been found to have better academic achievement in terms of higher GPAs and more course credits compared to disengaged students. The engaged students were more certain of their career choice, while disengaged students lacked interest or had uncertainty about their career path. In addition, the tendency to incorporate the emotional subtype into a general or combined measure of engagement has yielded mixed evidence with respect to its role in influencing academic achievement and learning in individuals (Sagayadevan & Jeyaraj, 2012).

### 3. METHODOLOGY

*Instrument.* The main purpose of the study is to examine the impact of emotional engagement in the academic achievement. Our research used a quantitative method, including a questionnaire distributed to the students of the Economic Faculty, University of Tirana through on-line platform, Microsoft Teams. All the students were voluntarily agreed to participate. To protect student anonymity, all completed forms were saved and only researchers had access to the data set.

*Measurement of variables.* First, we conducted a review of the available literature on emotional engagement, then gather the data and analysis to obtain more meaningful findings. SPSS Statistics Software was used to check the reliability of the measures, and the consistency of the measurements using Cronbach’s Alpha. The questionnaire used consists on demographic questions while the second part contains 5-point Likert scale questions on the emotional student engagement. All items are measured on a five Likert-scale from 1 representing “Never” to 5 representing “Always”. To measure the dependent variable, the researchers have used 12 statements.

*Participants.* The student who are participated in this research was from Economic Faculty, University of Tirana. The majority of the students were female 88.8 % and 11.2% were male. A total of 196 students completed the survey. From the data collected, there is a greater percentage of women in the sample due to the greater number of women attending the Business course at the Faculty of Economics. The selection was made randomly. The largest number of students corresponds to the studies in the third year of Bachelor studies.

Table 1. Socio – demographic characteristics of the respondents

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
<b>Female</b>	174	88.80%
<b>Male</b>	22	11.20%
Study program		
<b>Bachelor</b>	173	88.30%
<b>Master</b>	23	11.70%
Year of studies		
<b>I</b>	43	21.90%
<b>II</b>	19	9.70%
<b>III</b>	134	68.40%
<b>Working relationship</b>		
<b>Yes</b>	50	25.50%
<b>No</b>	146	74.50%

#### 4. ANALYSIS & DISCUSSION

First, descriptive statistics and reliability analysis were used to analyze the data. Table 2 present the internal consistency, Cronbach’s alpha, which shows the reliability of instruments, emotional engagement composed by 12 questions. From the value of Table 2, emotional engagement has good internal consistency since the value is greater than 0.7.

Table 2. Cronbach’s alpha

Cronbach's Alpha	No of Items
<b>0.806</b>	12

From Table 3, there is a positive relationship between the emotional and the academic achievement, in which the strength of the relationship is moderate ( $r=.255$ ) and its significance is  $<0.05$ .

Table 3. Correlations

		Academic Achievement
<b>Emotional engagement</b>	Pearson Correlation	.255**
	Sig. (2-tailed)	.000
	N	196

Following the scale analysis and reduction consideration, we assessed the model’s validity. This model was found to have an R square of 47.1 % and an Adjusted R Square of 45.7 %. This means that only 45.7 % of the model is explained by the variation between emotional engagement, study program, gender, years of studies, and working relationship, and 54.3 % is explained by other factors.

Table 4. Model Summary

<b>Table 4. Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.686	.471	.457	.878

The following table contains the output data acquired by the SPSS software after the empirical analysis, in which standardized coefficients are found and constitute the test of the relation proposed in this study. From the analysis, a significant relationship was found between emotional engagement and academic achievement, where a point of change in emotional engagement would increase academic achievements by 0.349 ( $\beta=0.349$  for  $p<0.05$ ). Also, a significant difference is between Bachelor and Master students, the more the age of students and their academic years increases, the less is the influence of emotional on academic performance. While gender, study program, and working relationship are not significant since the p-value is greater than 0.05, which means they don’t influence academic achievement. Emotional engagement.

Table 5. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.331	0.384		8.681	.000
Gender	.371	.203	.099	1.826	.069
<b>In which program study program are you?</b>	-.434	.222	-.118	-1.953	.052
<b>What year are you in (at university)? (Reference study program)</b>	-.927	.079	-.647	-11.660	.000
<b>Are you in a working relationship?</b>	.151	.156	.056	.969	.334
<b>Emotional</b>	.349	.103	.183	3.402	.001

### 5. ANALYSIS & DISCUSSION

From the data analysis, comparing the results of past studies with the current study, has been identified a few similarities with the results as well as a few contradictions. Pearson’s Product Moment Correlation is used to analyze the core objective: the relationship between student emotional engagement and the academic achievements. The outcome of the study demonstrates that there is a statistically significant, moderate positive relationship between the two variables. Additionally, Nauffal (2012), has come to the conclusion that emotional engagement encompasses a significantly high relationship with scholastic accomplishment. Research has shown that students who were emotionally engaged have more of a learning goal orientation, believe that they have an extended learning capacity, and were absolutely and relatively engaged (Handelsman, Briggs, Sullivan, & Towler, 2005). The article conducted by Appleton et al. (2006) presents its key findings stating that, cognitive and emotional engagement and its measures have an impact on the students’ learning and academic achievements. Changes in either of these two engagements has a positive impact on the students’ academic achievement. Students who are emotionally and cognitively engaged in learning are more willing to invest time and effort in their studies and display more persistence when facing problems than students who suffer from reduced levels of emotional and cognitive engagement (Wang, Willett, & Eccles, 2011). According to Newmann et al. (1992), a student can complete their work and learn well without being emotionally engaged in the topic, while Barbour and Bennett (2013) identified that positive social presence leads to students feeling emotionally comfortable and therefore emotionally engaged in the learning environment.

Another finding of the study is the academic cycle and year of study are significant and have a negative impact. A significant difference is between Bachelor and Master students, the more the age of students and their academic years increases, the less is the influence of emotional on academic performance. Additionally, the relationship varied as a function of age. When age increased, the effect of well-being on academic achievement decreased (Klapp, Klapp, & Gustafsson, 2022).

This study found several limitations that must be addressed. One limitation of this study is that we focused only a moderate sample size on business courses. So future studies it would be preferable to increase the sample size and may include students from several institutions in different cities to obtain a better model fit toward data and values for outcome variables. Moreover, the researchers have focused only on the business bachelor and master degree, which will be not be the best indicator to represent the entire university system. Future research can include other constructs to gain a better understanding of the factors that influence students’ emotional engagement and academic achievement.



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## References

- [1] Adva, H.-J. (2016). The Relationship between Student Engagement and Academic Achievement. The University of Auckland. Retrieved from <https://researchspace.auckland.ac.nz/docs/uoa-docs/rights.htm>
- [2] Appleton, J., Christenson, S., & Furlong, M. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools*, 45(5), 369–386. Doi: [HTTPS://doi.org/10.1002/pits.20303](https://doi.org/10.1002/pits.20303)
- [3] Appleton, J., Christenson, S., Kim, D., & Reschly, A. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology*, 44(5), 427–445. Doi: [HTTPS://doi.org/10.1016/j.jsp.2006.04.002](https://doi.org/10.1016/j.jsp.2006.04.002)
- [4] Barbour, M., & Bennett, C. (2013). The FarNet Journey: Effective Teaching Strategies for Engaging Māori Students on the Virtual Learning Network. *Journal of Open, Flexible, and Distance Learning*, 17(1), 12–23.
- [5] Baron, P., & Corbin, L. (2012). Student engagement: rhetoric and reality. *Higher Education Research & Development*, 31(6), 759–772. doi:10.1080/07294360.2012.655711
- [6] Baron, P., & Corbin, L. (2012). Student engagement: rhetoric and reality. *Higher Education Research & Development*, 31(6), 759–772. doi:10.1080/07294360.2012.655711
- [7] Connell, J. P., Spencer, M. B., & Aber, L. (1994). Educational Risk and Resilience in African-American Youth: Context, Self, Action, and Outcomes in School. *Child Development*, 65(2), 493–506. Doi: [HTTPS://doi.org/10.2307/1131398](https://doi.org/10.2307/1131398)
- [8] Connell, J., & Wellborn, J. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. Gunnar, & L. Sroufe, *Self-processes and development* (pp. 43–77). Lawrence Erlbaum Associates, Inc.
- [9] Finn, J. (1989). Withdrawing From School. *Review of Educational Research*, 59(2), 117–142. Doi: [HTTPS://doi.org/10.3102/00346543059002117](https://doi.org/10.3102/00346543059002117)
- [10] Fredricks, J., Blumenfeld, P., & Paris, A. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research*, 74(1), 59–109. Doi: [HTTPS://doi.org/10.3102/00346543074001059](https://doi.org/10.3102/00346543074001059)
- [11] Gunuc, S., & Kuzu, A. (2014). Student engagement scale: development, reliability and validity. *Assessment & Evaluation in Higher Education*, 40(4). doi:10.1080/02602938.2014.938019
- [12] Handelsman, M., Briggs, W., Sullivan, N., & Towler, A. (2005). A Measure of College Student Course Engagement. *The Journal of Educational Research*, 98(3), 184–191. Doi: [HTTPS://doi.org/10.3200/JOER.98.3.184-192](https://doi.org/10.3200/JOER.98.3.184-192)
- [13] Kahu, E. (2011). Framing student engagement in higher education. *Studies in Higher Education*, 38(5). Doi: [HTTPS://doi.org/10.1080/03075079.2011.598505](https://doi.org/10.1080/03075079.2011.598505)
- [14] Ketonen, E., Malmberg, L.-E., Salmela-Aro, K., Muukkonen, H., Tuominen, H., & Lonka, K. (2016). The role of study engagement in university students' daily experiences: A multilevel test of moderation. *Learning and Individual Differences*, 69, 196–205.
- [15] King, R. (2015). Sense of relatedness boosts engagement, achievement, and well-being: A latent growth model study. *Contemporary Educational Psychology*, 42, 26–38. Doi: [HTTPS://doi.org/10.1016/j.cedpsych.2015.04.002](https://doi.org/10.1016/j.cedpsych.2015.04.002)
- [16] Klapp, T., Klapp, A., & Gustafsson, J.-E. (2022). Relations between students' well-being and academic achievement: evidence from Swedish compulsory school. *European Journal of Psychology of Education*. Doi: [HTTPS://doi.org/10.1007/s10212-023-00690-9](https://doi.org/10.1007/s10212-023-00690-9)
- [17] Krause, K.-L., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education*, 33(5), 493–505. Doi: [HTTPS://doi.org/10.1080/02602930701698892](https://doi.org/10.1080/02602930701698892)
- [18] Kuh, G. (2009a). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research*, 5–20. Doi: [HTTPS://doi.org/10.1002/ir.283](https://doi.org/10.1002/ir.283)
- [19] Kuh, G., Kinzie, J., Buckley, J., Bridges, B., & Hayek, J. (2006). *What Matters to Student Success: National Postsecondary Education Cooperative*.
- [20] Lee, J. (2014). An exploratory study of effective online learning: Assessing satisfaction levels of graduate students of mathematics education associated with human and design factors of an online course. *The International Review of Research in Open and Distributed Learning*, 15(1). Doi: [HTTPS://doi.org/10.19173/irrodl.v15i1.1638](https://doi.org/10.19173/irrodl.v15i1.1638)
- [21] Lee, V., & Smith, J. (1995). Effects of high school restructuring and size on early gains in achievement and engagement. *Sociology of Education*, 68(4), 241–270. Doi: [HTTPS://doi.org/10.2307/2112741](https://doi.org/10.2307/2112741)
- [22] Lovelace, M., Reschly, A., Appleton, J., & Lutz, M. (2014). Concurrent and Predictive Validity of the Student Engagement Instrument. *Journal of Psychoeducational Assessment*, 32(6), 509–520. Doi: [HTTPS://doi.org/10.1177/0734282914527548](https://doi.org/10.1177/0734282914527548)
- [23] Nauffal, D. (2012). Assessment of Student Engagement: An Analysis of Trends. *Tertiary Education and Management*, 18(2), 171–191. doi:10.1080/13583883.2012.656696
- [24] Newmann, F. (1992). The Significance and Sources of Student Engagement. In F. Newmann, *Student Engagement and Achievement in American Secondary Schools* (pp. 11–39). New York: Teachers College Press.
- [25] Olana, E. (2022). Family, teachers and peer support as predictors of school engagement among secondary school Ethiopian adolescent students. *Cogent Psychology*, 9(1).
- [26] Sagayadevan, V., & Jeyaraj, S. (2012). The Role of Emotional Engagement in Lecturer-Student Interaction and the Impact on Academic Outcomes of Student Achievement and Learning. *Journal of the Scholarship of Teaching and Learning*, 12(3), 1–30.
- [27] Scott, G. (2008). University student engagement and satisfaction with learning. University of Western Sydney. Retrieved from file:///C:/Users/User/Downloads/Report.pdf
- [28] Steinmayr, R., Lemmer, G., Wirthwein, L., & Schwinger, M. (2014). Academic Self-Handicapping and Achievement: A Meta-Analysis. *Journal of Educational Psychology*, 106(3). doi:10.1037/a0035832

- [29] Tasir, Z., Al-dheleai, Y., Harun, J., & Shukor, N. (2011). Students' Perception towards the Use of Social Networking as an e-learning Platform.
- [30] Wang, M.-T., & Fredricks, J. (2014). The reciprocal links between school engagement, youth problem behaviors, and school dropout during adolescence. *Child Development*, 85(2). doi:10.1111/cdev.12138
- [31] Wang, M.-T., Willett, J., & Eccles, J. (2011). The assessment of school engagement: Examining dimensionality and measurement invariance by gender and race/ethnicity. *Journal of School Psychology*, 49(4), 465–480. Doi: [HTTPS://doi.org/10.1016/j.jsp.2011.04.001](https://doi.org/10.1016/j.jsp.2011.04.001)
- [32] Wang, Z., Sharma, P. N., & Cao, J. (2016). From knowledge sharing to firm performance: A predictive model comparison. *Journal of Business Research*, 69(10), 4650–4658. Doi: [HTTPS://doi.org/10.1016/j.jbusres.2016.03.055](https://doi.org/10.1016/j.jbusres.2016.03.055)
- [33] Zhao, C.-M., & Kuh, G. (2004). Adding Value: Learning Communities and Student Engagement. *Research in Higher Education*, 45, 115–138. Doi: [HTTPS://doi.org/10.1023/B:RIHE.0000015692.88534.de](https://doi.org/10.1023/B:RIHE.0000015692.88534.de)
- [34] Zukan, S., & Aldulaimi, S. H. (2020). The Influence of Grade Expectation and Student. *International Journal of Scientific and Technology Research*, 9(1), 4405-4410.

# A Study on the Effectiveness of Mobile Learning Applying Mobile Devices Combined with English Self Built Apps - For the Case in Campus environment Introduction

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## Abstract

The mobile learning in this study applied mobile devices along with the Internet link, looking forward to not only raising students' learning motivation, but also helping teachers change the current teaching situation. When designing a course for mobile learning, consideration should be given to such factors as the teacher's information competence, the online links to the area where the activity is to be performed, the planning of circulation in activities, the convenience of operation, and the likelihood of continued execution in the future.

**Keywords:** Mobile Learning, Mobile Devices, Campus environment English self built apps

## 1. INTRODUCTION

All regions face similar challenges in delivering sustainable transport solutions to meet their current and future mobility requirements. Transport authorities are aware of the real needs specific to their region but often find it difficult to identify detailed information on targeted solutions that would deliver direct and tangible positive outcomes. In recent years, the development of mobile technology has continued to grow in importance, including laptops, tablets, mobile phones, smartphones, wireless technology, GPRS connections, and Bluetooth (Ozdamli & Cavus, 2011). Action learning is one of the most developing research areas in the field of technology-enhanced learning (Johnson et al, 2014)

Mobile Learning is learning through mobile computing devices (Quinn, 2000). It means that users use mobile vehicles and wireless networks to learn and acquire knowledge and information. Mobile learning devices are one of the important elements that constitute mobile learning, that is, they need to have the function of wireless transmission to be able to move at will and not be constrained by the environment, and have mobility. The size of mobile vehicles is lighter, shorter and lighter than previous laptops, making it easier for learners to carry and use, and their acceptance has also increased. Mobile learning methods that are not limited by time and space are even more popular. Kynaslaht (2003) An important aspect of mobile learning The first aspect is mobility, which emphasizes free movement and cooperation. Mobile learning is the existence of a real environment that allows learners to deeply understand and construct knowledge (Miller, C., & Doering, A., 2014).

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Action learning is fragmented and fragmented (Miller, C., & Doering, A., 2014). That is to say, it is revealed that mobile learning is not a highly complete and systematic learning method. The advantage of mobile learning is to integrate and explore how to use mobility in daily learning environments. It is an interdisciplinary and cross-field learning method.

When exploring the success factors of mobile learning, Cochrane (2010) found that the key success factors in promoting mobile learning include: the importance of teaching integration of technology to course assessment, teachers building teaching tools, teachers and students needing frequent interaction and feedback, and mobile appropriate selection of equipment and software supports the teaching model.

In addition, Alrasheedi & Capretz (2013) concluded in their study that due to the pervasive and ubiquitous nature of mobile phones, it is difficult to sort out the key factors for successful adoption of mobile learning platforms in the face of different settings and backgrounds.

Vanderlinde & van Braak (2010) mentioned that many aspects of the E-Capacity model refer to the model of Kozma (2003). In their conceptual model of innovative teaching practice, they also mentioned that relevant aspects include, at the micro level, when promoting information education. Such as curriculum design, teachers' ICT experience, teacher and student characteristics, etc.; meso-level, such as principal leadership, parents' roles, ICT infrastructure, administrative technical support, local culture, etc.; macro-level, such as national policies and international trends, etc.

In addition, in Ng, W., & Nicholas, H. (2013), in the framework for schools to steadily promote mobile learning, it is mentioned that when schools promote mobile learning, they should develop in a "people"-centered model, including leaders clearly The viewpoints and relevant personnel all agree on the purpose of using technology, listening to the voices of teachers and students, etc., rather than just innovative teaching that can be sustained. Vatanartiran & Karadeniz (2015) also mentioned that when implementing information technology promotion, students' own pre-class preparation, technological literacy, and active learning attitude are also important.

## **2. MATERIAL AND METHOD**

### *2.1. Participants*

Sixth-grade students from a national elementary school in KinmenTaiwan. were used as the subjects of the study. The samples were selected to facilitate sampling. The experimental group with 27 students uses mobile devices and YouTube film teaching. The control group with 27students uses the traditional narrative teaching. This study only covers the concept units related to campus environment materials with the theme of campus environment introduction. Duration of the study: three weeks from late March to early April, 101.

### *2.2. Instruction design*

The treatment group was taught with mobile devices combined with English self built apps, while the control group was taught in the traditional way of lecturing. Before and after the implementation of the activity, the effectiveness test was conducted, and the satisfaction questionnaire was filled in. At last, the quantitative analysis was conducted to explore the differences in learning attitudes and learning outcomes between the two groups of students.

## **3. RESULTS**

### *3.1. Participants*

The purpose of this study was to explore the impact of learning methods and teaching effectiveness on the students' learning attitudes towards the use of mobile devices and YouTube film to read campus environment materials with the theme of campus environment introduction, and to establish a simple and easy method to update the data. In this study, quasi-experimental research method was used to conduct the research by means of guidance introduction, activity satisfaction questionnaire, pre- and post-effectiveness test papers and so on. The research object was two classes of sixth graders of Zhongzheng Elementary, a total number of 54 students. The treatment group was taught with mobile devices combined with English self built apps, while the control group was taught in the traditional way of lecturing. Before and after the implementation of the activity, the effectiveness test was conducted, and the satisfaction questionnaire was filled in. At last, the quantitative analysis was conducted to explore the differences in

learning attitudes and learning outcomes between the two groups of students. The researcher analyzed the data and got the following conclusion according to the purpose of the study:

1. It was achievable to develop the course on the theme of campus environment carried out with mobile learning and continuous update with simple and easy method.
2. The use of mobile devices combined with English self built apps for campus environment introduction improving students' attitudes towards learning.
3. Mobile learning applied to campus environment introduction raising students' academic achievement.

## References

- [1] B Alrasheedi, M. & Capretz, L.F. (2013). *A Meta-Analysis of Critical Success Factors Affecting Mobile Learning*, Proceedings of IEEE International Conference on Teaching, Assessment and Learning for Engineering, Bali, Indonesia, 262-267.
- [2] Cochrane, T. (2010). Exploring mobile learning success factors. *Research in Learning Technology* 18(2),133–148.
- [3] Johnson, L., Adams Becker, S., Estrada, V. and Freeman, A. (2014). NMC Horizon Report: 2014 Higher Education Edition In: Austin, TX: The New Media Consortium.
- [4] Kynaslahti, H. (2003). In search of elements of mobility in the context of education. In H. Kynaslahti & P. Seppala (Eds.), *Mobile learning*, 41–48.
- [5] Miller, C. & Doering, A. (2014). *The new landscape of mobile learning: Redesigning education in an app-based world (1st ed.)*. New York, NY: Routledge.
- [6] Ng, W., & Nicholas, H. (2013). A framework for sustainable mobile learning in schools. *British Journal of Educational Technology*, 44(5), 695-715.
- [7] Ozdamli, F. & Cavus, N. (2011). Basic elements and characteristics of mobile learning. *Procedia-Social and Behavioral Sciences*, 28, 937-942.
- [8] Quinn, C. (2000). mLearning: Mobile, Wireless and in-Your-Pocket Learning. Line Zine Magazine. Retrieved from <http://www.linezine.com/2.1/features/cqmmwiyp.htm>
- [9] Vanderlinde, R., & van Braak, J. (2013). Technology planning in schools: An integrated research-based model. *British Journal of Educational Technology*, 44(1), 14-17.
- [10] Vatanartiran, S., & Karadeniz, S. (2015). A Needs Analysis for Technology Integration Plan: Challenges and Needs of Teachers. *Contemporary Educational Technology*, 6(3), 206-220.

# Research on the E-Commerce Economy of Urban Villages from the Perspective of "Growth Machine" Theory - Taking Qingyan Liu Village, Yiwu City as an Example

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## Abstract

At present, with the changes of China's social and economic environment and the rapid development of new technologies such as mobile Internet, urban villages are undergoing new changes from bottom to top, such as the active e-commerce economy in urban villages, and the resulting economic growth and spatial function changes of urban villages. Currently, most of the relevant researches are descriptive and empirical studies, and there is little analysis on the mechanism of the new economic growth of this kind of urban villages, especially the analysis of the micro-mechanism. Therefore, starting from the perspective of the "growth machine" theory, this study takes "China's No. 1 Taobao Village" Qingyan Liu Village, Yiwu City as an example, analyzes the reasons why the e-commerce economy can develop and grow in urban villages, and focuses on the relationship between economic growth, actors and spatial characteristics of urban villages. It believes that how to balance the relationship between the space exchange value and use value is the key to the sustainable development of such urban villages under China's new development background.

**Keywords:** Electronic Commerce, Qingyan Liu Village, Rural Growth Machine, Urban Villages.

## 1. INTRODUCTION

"Urban villages" are a unique product of China's urbanization process. For a long period of time, urban villages have been negatively viewed by the outside world due to their problems in space, economy, floating population, and public security. However, since 2009, more and more scholars have realized the positive value of urban villages, and believe that urban villages are the livelihood guarantee for landless farmers, provide a place for new citizens to settle down, and play the role of "pressure reducing valve" and "buffer" in the process of extensive urbanization **Chyba! Nenalezen zdroj odkazů..** Urban villages have attracted many "world factories" with cheap land and labor, and have also made irreplaceable contributions to China's economic miracle **Chyba! Nenalezen zdroj odkazů..**

With the changes in China's economic and social environment and the rapid development of new technologies such as the mobile Internet, urban villages are undergoing new changes from the bottom up, such as the active e-commerce economy in urban villages, and the resulting economic growth and spatial function changes. At present, the relevant research is mostly descriptive[3]-[5], and there are few analyzes of the mechanism of this new economic growth, especially the analysis of the micro mechanism. Therefore, this study will start from the perspective of the "growth machine" theory[6], analyze the reasons why the e-commerce economy can develop and grow in urban villages, focuses on the relationship between economic growth and urban village actors and spatial characteristics, then propose the key point to the renewal strategy of such urban villages under the new development background.

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## 2. THEORETICAL FRAMEWORK AND EMPIRICAL OBJECT

### 2.1 Theoretical framework

The main variables of the growth machine theory include the government, rentiers, entrepreneurs, and other actors (local media, utilities, auxiliary players, etc.) ,and those form the anti-growth coalition(the neighborhood, middle-class professionals, workers,etc.). Since there are still large differences in the level of development and institutions between urban and rural areas in China, when applying the growth machine theory to rural areas and then explaining the phenomenon of rural growth driven by e-commerce, it is necessary to summarize the different characteristics of these variables from the urban context to the rural context, according to the actual situation in rural China. Based on the characteristics of variables in the Chinese rural context, the deformation of the rural growth machine is mainly manifested in the following three aspects: the weakening of the rentier group ensures the low-cost realization of the value of rural land use, the integration of neighborhood and local elites eliminates the internal growth resistance, and the local government’s support form an external thrust. The combined effect of the three aspects makes China’s rural growth machine more efficient (Figure 1).

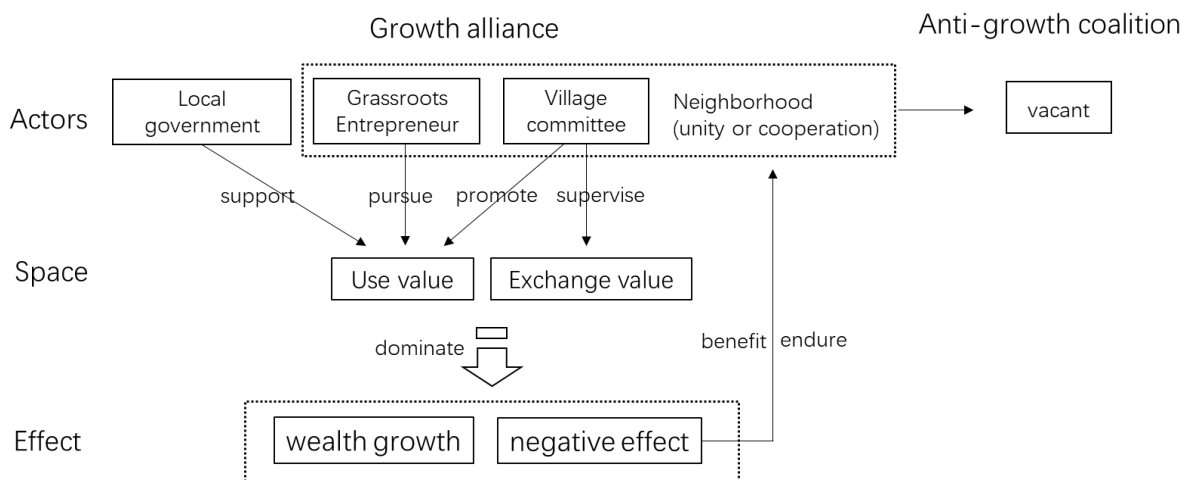


Figure 1 The Mechanism of Rural Growth Machines Based on E-Commerce Specialized Villages

- The weakening of exchange value and rentier groups

Rentiers are also called “spatial entrepreneurs”, which Moloch (1976) defined as “people who are directly involved in spatial exchange and rent collection”. Since rural China implements collective ownership of land, and land property rights are vested in the collective, there is no large privatized elite that controls land, that is, a group of rentiers. At the same time, collective ownership basically limits the large-scale free trade of rural land. The exchange value of land cannot be fully exploited, but the use value of the land is basically not affected. In the rural growth machine driven by e-commerce, the use value of space has been fully realized, while the exchange value and the expression of value "rent" are in a secondary position, which provides sufficient low-cost for the initial development of e-commerce space, thereby forming strong market competitiveness.

It should be noted that as the growth machine itself develops and external conditions change, exchange value is not always secondary to use value, even in a rural context. For example, in areas such as urban-rural junctions and urban villages, with the expansion of urban built-up areas and changes in location conditions, although these villages are restricted by the collective land system and unable to conduct complete land property rights transactions, they can rent or sell on behalf of others or privately. Through contract and other means, the exchange value of land can still be realized and continue to rise. When the exchange value and its manifestation "rent" dominate, the rentier group will reappear and have a huge impact on the structure of the growth machine, often Resulting in the displacement of land uses and land user groups, it may also lead to suppressed growth. On the other hand, if the increase in exchange value is suppressed under effective community governance and use value always dominates, the influence of the rentier group will be controlled below a certain threshold, thereby maintaining the sustainability of the growth machine.

- Unification of neighbors and local elites

The process of growth achieved by the urban growth machine does not always represent the interests of residents. Residents are more concerned about the use value related to space. The maintenance of "home" in the greatest sense prompts people to form neighborhood organizations and constitutes the main component of anti-growth forces. They often come into conflict with growth coalition actors who strive for higher rents in pursuit of the exchange value of space. However, in professional villages developing the e-commerce industry, the core of the growth alliance is rural "grassroots" entrepreneurs [1], who are both members of rural neighborhood organizations and local entrepreneurs. Therefore, in the operation of the rural growth machine, neighbors and local elites are integrated, and the biggest advantage brought by this is the elimination of anti-growth forces. Growth is always accompanied by problems, such as environmental pollution, traffic congestion, insufficient public services and infrastructure, and increased living costs for residents. In the urban growth machine, debts are often borne by ordinary people, who therefore become the main force of the anti-growth coalition. In rural China, the negative effects of growth also exist objectively. However, since neighbors and local elites are the same group, especially in the early stages of grassroots entrepreneurship, there is basically no anti-growth force. Even when the rural economy is booming and villagers are experiencing clear income and occupational differentiation, the anti-growth forces are not strong due to the existence of village collectives and rural social relations, resulting in basically no internal resistance to growth.

The unity of neighborhood and local elites is not limited to the complete identity of the two, but also includes the close cooperation between the two over a period of time. In some villages at the interface between urban and rural areas, foreign entrepreneurs rent the houses of indigenous people for business and living, and drive local villagers to engage in e-commerce work, forming a state of existence where the foreign population and neighbors are mixed. At this time, the two Based on common wealth interests, it also reflects a high degree of unity. However, as external conditions change, this close cooperation may be impacted by various factors and disintegrate. Therefore, it is not stable, but a specific connection within a certain period of time.

- Strengthening of the role of local government

Since the career promotion of local government officials in China mainly depends on political performance, local officials need to work closely with enterprises in their jurisdiction to form a "performance-performance" link and a regional growth alliance. This logic also applies to rural areas in China. Especially with the gradual adjustment and optimization of the assessment indicator system, in addition to economic development performance, the implementation of national strategies such as poverty alleviation and rural revitalization has also become an important aspect of performance assessment, which requires local governments to The government further strengthens its role in the local development process. Since the vigorous development of rural e-commerce can help farmers get rid of poverty and become rich, and then promote the implementation of rural revitalization strategies through industrial prosperity, local government officials generally actively support the development of e-commerce professional villages. At the same time, because most of the grassroots officials in townships are locals and often have inextricable relationships with rural residents, relatively loose control strategies are often adopted in the process of assisting the development of grassroots entrepreneurs, without breaking the red line of the system. Try to provide support in all aspects, which is especially obvious in terms of space supply.

## 2.2 Demonstration objects

Qingyan Liu Village is located in Jiangdong Street, Yiwu City, about 5km away from the downtown area of Yiwu, and about 7km away from Yiwu International Trade City. The village was originally a typical urban village, with an area of 28hm<sup>2</sup> and a registered population of 1,735. In 2005, Qingyan Liu Village carried out the old city reconstruction and a total of 216 resettlement buildings were allocated to villagers according to their household registration. Relying on the space cost advantage of relatively low rent, the advantage of entrepreneurial talents adjacent to "Yiwu Industrial and Commercial College", the advantage of traffic location close to the city's main road and high-speed exit, and the advantage of supply of goods from the Yiwu Small Commodity Market, the e-commerce industry of Qingyan Liu Village has developed rapidly. On November 19, 2014, Premier Li Keqiang of the State Council visited Qingyanliu and praised Qingyanliu Village for "the online store serves the real economy in the virtual space and opens up a huge market space. You are worthy of being the No.1". According to statistics, during the five years from 2014 to 2019, the per capita disposable income of Qingyanliu residents exceeded that of Jiangdong Sub-district by 16.4%, and that of Yiwu City by 23.1%. The e-commerce industry has directly created employment for about 85,000 people and indirectly driving employment for about 300,000 people. In recent years, the e-commerce industry in Qingyan Liu



Village has developed steadily, with annual sales stably at 6 billion to 7 billion yuan. There are more than 4,000 online stores in the area, and more than 20,000 e-commerce employees (mainly migrants).

Qingyan Liu Village was one of the first three Taobao villages discovered in the country in 2009. After more than ten years of development, it still maintains a trend of growth or stability without showing signs of weakening. This urban village has achieved high-quality urbanization through the development of the e-commerce industry: villagers' employment is non-agricultural, their lifestyles are modernized, and their physical space environment is intensified. From the reconstruction of old cities and the construction of resettlement housing to leasing it as an auxiliary functional space for e-commerce entrepreneurship and various industrial chains, Qingyan Liu Village's spatial functions have undergone tremendous changes, creating a relatively stable growth alliance. During this period, land rents have increased significantly. , the growth machine theory can be used to analyze the microscopic mechanism of growth.

### 3. THE EMERGENCE OF RURAL GROWTH MACHINE: COLLUSION BETWEEN MIGRANT ENTREPRENEURS AND VILLAGES

The transformation of the old city provides low-cost space for urban villages. The opportunity for the development of the e-commerce industry in Qingyan Liu Village first comes from the need for a large number of standardized and low-cost spaces to find tenants. In 2005, Qingyan Liu Village completed the reconstruction of the old village, and the villagers were housed in residential buildings under unified planning and construction.(Figure2). Due to the relatively remote geographical location of Qingyan Liu Village in the urban-rural junction, coupled with the low construction cost of the self-built houses and the small area of the single room, these resettlement houses form a low-cost space, and the rent level is relatively low in the region. According to Mao Shengping, the current Party branch secretary of Qingyan Liu Village: "The four and a half-storey small buildings in this village are 20% -30% cheaper than the rent in the same area in Yiwu at the same time".



Figure 2 Houses after reconstruction of the old city of Qingyan Liu Village  
(Source: Photographed by the author)

The village committee promoted the entry of young entrepreneurs. In 2009, Yiwu Industrial and Commercial College took the lead in setting up Taobao entrepreneurship classes among colleges and universities across the country, encouraging students to rely on Yiwu's advantages in the national small commodity market to start businesses on the Taobao platform. Yiwu Business College is only 1.2 kilometers away from Qingyan Liu Village. Qingyan Liu Village's low-cost rental space, adjacent geographical location advantages, and convenient transportation conditions are very suitable for young students who are starting their own businesses. The proposal to develop e-commerce was recognized by the cadres of Qingyanliu Village Committee at the time, so the village seized the opportunity to cooperate with Yiwu Business College to establish a practice base for college students and attract young college students to rent houses in the village to start businesses. Afterwards, nearly 10,000 students succeeded in starting businesses in Qingyanliu, and hatched more than 80% of Yiwu's large e-commerce companies.

As a unique villager autonomous organization in China, it is necessary to discuss here the important role it plays in the growth machine of Qingyanliu Village. In the growth machine theory, because it is use value that guides the behavior of most urban residents rather than exchange value, they are "naturally unorganized" (Friedland and Palmer, 1984) **Chyba! Nenalezen zdroj odkazů.** Only abnormal situations can allow them to unite and fight effectively. Those business elites, and for these elites, because they tend to speculate, they are "naturally organized" (Stone, 1982)

**Chyba! Nenalezen zdroj odkazů.** Under such circumstances, in Western countries represented by the United States, community organizations (Community Organization) are created to solve some problems that residents regard as beyond the capabilities of existing governments and single-focused citizen associations, however, these community organizations are easily shaped by elites and reach a compromise. The most critical reason is that community organizations cannot make money on its own, it must work hard for the funds needed for survival (including remuneration and other expenses for the organization's staff). One way to survive is to give up resistance. Even when the conditions for exchange value are suitable, community organizations are in a position to obtain more purpose will promote the reuse of poor neighborhoods, and in this mechanism ultimately the interests of neighbors (especially poor neighborhoods) are still sacrificed.

In China, the existence of village collectives and villagers' self-governance systems can in many cases better organize neighbors. Qingyan Liu Village has the ability to produce its own order: collaborative economy, maintaining social ethics, and protecting the legitimate rights and interests of the village and villagers. Violated etc. Among them, village cadres are the key actors of this autonomous organization. Their motivation mechanism comes not only from economic gains, but also from social gains: gaining respect from others, good interpersonal relationships, and a broader social network, and the pleasure, face, respectability brought by this kind of network, as well as the very important feeling of achieving political ambitions and self-fulfillment. **Chyba! Nenalezen zdroj odkazů.** Based on these motives, the village committee cadres of Qingyan Liu Village not only hope to solve the problem of villagers renting out vacant properties as soon as possible, but also hope to achieve political development through the introduction of industries. As a result, the village committee is promoting young entrepreneurs to settle in the village. It played an important role. In the case of Qingyan Liu Village, a village collective with effective governance not only has the function of resisting the intrusion of external interests as a Western "community organization", but can also coordinate neighbors to strike a balance between use value and exchange value, and it has higher stability.

E-commerce entrepreneurial activities with a high rate of return on capital, the low-cost space provided by the rural collective land system, and the close cooperation between rural neighbors and entrepreneurs, the efficient combination of the three elements in the rural area has made the rural growth machine quickly mobilized in Qingyanliu Village.

#### 4. INHIBITION OF LAND RENT GROWTH: THE ROLE OF ACTIVE VILLAGE GOVERNANCE

According to Logan and Moloch, in general, exchange value threatens the existence of "neighborhoods" (or communities) **Chyba! Nenalezen zdroj odkazů.**, because in most cases, the creation and protection of the use value of "neighborhoods" is the main problem of residents. Neighborhood provides residents with daily life, informal support network (family mutual help, information exchange of employment and life tips, etc., the poorer the family, the more dependent on these networks), safety and trust, the boundary and meaning of identity, etc. But on the other hand, Logan and Moloch also observe that "the exchange value interests of some residents in their neighborhood properties can create a neighborhood identity that can not only help preserve a way of life but also destroy it."

Qingyan Liu Village, including many urban villages with similar characteristics, is a village that takes exchange value as the main problem. The villagers of Qingyan Liu, after undergoing the transformation of the old city, have completely given up farming. The real estate and its exchange value after resettlement are the most important resources in their hands. Even if they are not regarded as the "rentier class" engaged in spatial structural speculation, they are also a type of spatial entrepreneur—"Serendipitous Entrepreneur": they become rent-collectors dependent on exchange value. Therefore, for the aborigines of Qingyanliu Village, the exchange value and its manifestation—rent, surpasses the "emotion and connection of home" given to the traditional "neighborhood" and occupies a dominant position in their behavioral logic, when market conditions permit, they will try to push up land rent to obtain more wealth.

With the vigorous development of the e-commerce industry and the increasing number of migrants, the land rent in Qingyan Liu Village has experienced a continuous increase since 2005. According to Qian Jian and Zheng Zhifeng’s investigation, the rent of Qingyan Liu Village stores has increased from 8,000 (yuan/room/year) to 37,000 (yuan/room/year) (2008-2011), and the housing rent for foreign entrepreneurs to live rose from 5,000 (yuan/room/year) to 14,000 (yuan/room/year) (2008 -2011). However, according to the survey conducted by the author in Qingyan Liu Village in August 2021 and April 2022, the land rent price in Qingyan Liu Village has entered a very stable state in recent years, and its overall rent level is almost the same as that in 2011.

From the perspective of the villagers, it is logical to pursue the exchange value to raise the rent, and because of the scattered and independent nature of individual villagers, it is difficult for the villagers themselves to consciously control individual behavior from the perspective of group interests. In another urban village in Yiwu known for its live broadcasting e-commerce—Beixiazhu Village, there has already been a phenomenon of business spillover caused by the rapid increase in land rent: The landlords in Beixiazhu Village doubled their rent overnight. The entrepreneurs in Beixiazhu Village at that time felt very uneasy, and transferred part of their business, personnel and goods to urban villages with similar surrounding environments. For example, Pingchou Village, which has just completed the transformation of the old city, has accepted many migrants. (Figure3).

While active governance by the village committee has played an important role in maintaining rent stability in Qingyan Liu Village. The village committee is an important part of the growth alliance. On the one hand, it represents the interests of the "neighborhood" and needs to protect the legal rent-collecting interests of the villagers. What's more, many village committee cadres themselves or their families are also real estate lessors. The maintenance of the village is closely related to itself; but on the other hand, the cadres of the village committee are also pressured and motivated by the performance appraisal, and they have a sense of responsibility for maintaining the brand of "E-commerce Entrepreneurial Home" in Qingyan Liu Village. Therefore, the village committee actively seeks a balance between the two to keep the growth machine running smoothly. For example, under the intervention of the village committee, the rental rights of shops along the street in Qingyan Liu Village were consolidated into the Village Economic Association, which signed an agreement with the merchant tenants. This guarantees the stable development of foreign entrepreneurs in the village.

### 5. SATURATION AND MIGRATION OF RURAL GROWTH MACHINE:SPILLOVER OF GROWTH ENTITIES AND INDUSTRIAL TRANSFORMATION

Logan and Moloch point out that the basic elements (or key actors) that make up a growth machine move with varying ease and speed: pure capital investments (in money, stocks, or other financial forms) move most easily, machines The mobility of investments in and factories is second, local rentiers holding investments in land and buildings have the most limited mobility of all entrepreneurial types, while labor (especially the general labor force in a specific place of residence) is the least mobile of. In the growth machine of Qingyan Liucun, foreign e-commerce entrepreneurs have the best liquidity. First of all, they have no emotional connection with the local area. Due to the restrictions of China’s rural homestead property rights system, they do not occupy entrepreneurial space. and land ownership, and the type of e-commerce they engage in is mainly small commodity transactions and does not occupy



Figure 3 Pingchou Village, which has accepted the transfer of e-commerce business from Beixiazhu Village (Source: Photographed by the author)

machines and factories. Therefore, when the environment of Qingyan Liu Village does not support their further



expansion of scale and development, they will use Yiwu, a city full of business opportunities. Find a new space. The spatial entrepreneurs who own land and buildings, that is, the villagers of Qingyan Liu Village, have very limited mobility, not only because of their emotional connection with the land and rural social relations in the village, but more importantly because they rely on renting. With the continuous cash flow provided by real estate, when a group of mature e-commerce entrepreneurs leave, they will be eager to welcome the next group of entrepreneurs.

The factors restricting the further expansion of Qingyanliucun's e-commerce industry mainly come from three aspects: the e-commerce platform's own traffic bottleneck, homogeneous competition of products, and insufficient



Figure 4 Supply chain and live broadcast companies attracted by Qingyan Liu after industrial upgrading  
(Source: Photographed by the author)

warehousing space. After more than ten years of development, China's e-commerce industry has become a relatively mature and traditional industry. In particular, the traffic of online shopping platforms such as Taobao, Tmall, JD.com, and Pinduoduo has approached the ceiling. The entire e-commerce industry is moving toward Explore new sources of traffic by tapping private domain traffic, social shopping, live broadcast economy and other directions. Homogenous competition is inevitable under limited traffic restrictions, so this is a common problem in the industry. In response to this problem, Qingyan Liu Village established Qingyan Liu Brand Management Co., Ltd. to build a cross-border e-commerce talent entrepreneurial park, expand cross-border e-commerce business, create an O2O marketing model that combines online sales and offline exhibition halls, and attract supply chains and live broadcasting companies (Figure 4), gradually realizing transformation and upgrading. Through various measures, Qingyan Liucun's annual e-commerce sales have been stable at around 6-7 billion yuan in recent years.

The lack of storage space is a bottleneck that Qingyan Liucun cannot overcome at present. According to a survey by Qian Jian and Zheng Zhifeng, 46.7% of the online merchants surveyed expressed a lack of storage space. As the scale of e-commerce entrepreneurs expands, they need larger capacity storage space. The small basement space designed as a residence in Qingyan Liu Village can no longer meet the demand. They choose to move out of Qingyan Liu Village and move to the e-commerce industrial park. Wait for the park to seek further development. Compared with the expansion process of production and warehousing space in Daji Town, Qingyan Liucun reflects the limitations of its spatial resources as an urban village. Although China's land resource constraints are becoming increasingly tight, the land and space of purely rural areas such as Daji Town Resources are also becoming increasingly tight, but as a village in the city, Qingyan Liu Village is subject to extremely strict spatial controls. If Daji Town can still strive for a small amount of expansion space through the political operation of the grassroots government, the spatial capacity of Qingyan Liu Village has been greatly reduced after the renovation of the old city. It has been fixed since then, and the current industrial scale achieved by Qingyan Liucun has reached the capacity saturation limit of this growth device.

Qingyan Liucun has become a "foothold" for e-commerce entrepreneurs. After the entrepreneurs succeed here or achieve a certain scale, they spill over to the e-commerce parks in Yiwu City to continue development, and the space vacated is occupied by a new batch of arrivals. of startups filled. In this process, the efforts of ordinary villagers as de facto spatial structural speculators are limited. Their most important job is to post rental information in the village to promote their own rental houses. The work of maintaining the constant influx of new entrepreneurs is mainly undertaken by village committees and economic federations. For example, in 2015, Qingyan Liucun and Yiwu Technology and Business College jointly created an entrepreneurship laboratory (Entrepreneurship College), established an entrepreneurship incubation center. In 2018, it completed the renovation of the boutique block and the

construction of the 716 E-commerce Mass Entrepreneurship Park, continuously creating and maintaining a strong e-commerce atmosphere, upgrade basic services to continuously attract new entrepreneurs to flow into Qingyan Liu Village.

In fact, the physical and spatial environment of Qingyan Liu Village has already been urbanized during the reconstruction of the old city. The launch and operation of the growth machine in Qingyan Liu Village has provided stable rental income for the villagers to support the rural transformation. Non-family life and development have enabled the villagers of Qingyan Liu Village to successfully complete the transition to citizenship and life modernization, thus realizing comprehensive urbanization of people. On the other hand, the constant flow of foreign entrepreneurs completed the initial accumulation of capital in Qingyanliu, and mature entrepreneurs spilled over and bought houses and settled in Yiwu City, driving their families to move to the city to complete urbanization. Therefore, relying on the continuous and stable operation of the rural growth machine, Qingyan Liucun has become a "converter" for foreign entrepreneurs to complete the urbanization process, and an important place for them to achieve wealth growth and citizenization transformation.

## 6. SUMMARY

Taking Qingyan Liu Village as an example, this study explains the mechanism of how the rural growth machine starts and operates in urban villages. The space-exchanging value-manifesting rural growth machine represented by Qingyan Liu Village has the following characteristics: the villagers rely on the renting out of resettlement houses obtained by the reconstruction of the old city and become de facto rentiers of space, and foreign entrepreneurs obtain space through leasing behavior. The use value of the space and the exchange value of the space obtained by the villagers renting out the property, the two reached a growth alliance through the common interests of the space; in this process, the "village collective" with the village committee cadres as the key actors played an important role. The start and operation of the growth machine provides a place for the aborigines and migrants to grow their wealth and complete the transformation of life modernization. How to balance the relationship between space exchange value and use value is the key to the development and governance of this type of urban village.

## References

- [1] ZHANG Jingxiang, ZHAO Wei. City Village in Dual System Environment: Development and Significance[J]. City Planning Review, 2007(1):63-67.
- [2] WANG Y P, WANG Y, WU J. Urbanization and Informal Development in China: Urban Villages in Shenzhen[J]. International Journal of Urban and Regional Research, 2009, 33(4): 957-973.
- [3] Zhang Can, Formation Mechanism of the E-Commerce Industrial Cluster —— A Case Study about "the First Village of Taobao" [J]. Regional Economic Review, ,2015(06):97-104.
- [4] QIAN Jian; ZHENG Zhifeng, E-Commerce clusters based on Taobao Industrial Chain: A case study on Qingyan Liu Village in Yiwu City[J]. City Planning Review, 2013(11):79-83.
- [5] YANG Liangmin, JIANG Yihang, Zhang Ni. Qingyan Liu: "The First Village of Online Shops" Interprets the Legend of "Double Creation" [J]. China Development Observation, 2019(20):19-24.
- [6] Logan J R, Molotch H L. Urban Fortunes: The Political Economy of Place[M]. Berkeley: University of California Press, 2007.
- [7] Friedland, Roger, and Donald Palmer. 1984. "Park Place and Main Street: Business and the Urban Power Structure." Pp.393-416 in Ralph Turner(ed.), Annual Review of Sociology, vol.10. Beverly Hills, Calif: Sage.
- [8] Stone, Clarence N. 1982. "Social Stratification, Non-Decision-Making and the Study of Community Power." American Politics Quarterly 10(3):275-302.
- [9] HE Xuefeng, DONG Leiming. China's rural governance: structure and types [J]. Comparative Economic and Social Systems, 2005(03):42-50+15.
- [10] Logan J R., Molotch H L., translated by Chen Nabo et al. Urban Wealth: The Political Economy of Space [M]. Shanghai: Gezhi Publishing House; Shanghai People's Publishing House, 2015, P107-108.

# Effect of Employee Job Satisfaction in Local Banks on Their Propensity to Resign

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## Abstract

Developments on the labor market point to a shortage of skilled workers in various sectors. Experts predict that the shortage of skilled workers in the banking sector will become a major challenge. This study examines how the job satisfaction of bank employees in a local bank affects their intention to leave their jobs. The research methodology involves conducting expert interviews followed by surveys of local bank employees. Job satisfaction is assessed using a comprehensive set. Data analysis is conducted using SPSS software with the primary goal of establishing a relationship between job satisfaction and its influence on bank employees' intention to quit. The overall goal of this paper is to develop a model that can help managers increase employee retention in times of skill shortages in banks. This can be achieved by increasing employee job satisfaction.

**Keywords:** Financial Institution, Development Bank, Job satisfaction, Turnover intention

## 1. INTRODUCTION

When we examine international banking systems, it becomes evident that each country possesses its own unique banking structure. Germany, in particular, employs a distinctive three-pillar model that sets it apart from many other nations. In this model, large private banks, online banks, and local savings banks each play pivotal roles, contributing to a diverse financial landscape. Large banks and online banking institutions differentiate themselves from local savings banks primarily through their branch structure. They operate with a more extensive network of branches and employ a significant number of staff members who engage in face-to-face interactions with customers in various local regions. These personal interactions often influence the commission income generated by these banks.

Employees are of considerable importance for the German banking market. The 350 savings banks in Germany alone employ over 190,000 people. In addition to this market leader in the German banking market, the regional savings banks, there is a second sector worth mentioning, the cooperative banks, these are in particular Volksbanks, as well as the private banking market. The German banking market thus consists of three sectors. As mergers and the reduction of the branch network are partly seen as success factors, there has been a decrease in the total number of banks in Germany (1,458 in December 2022) and a decrease in bank branches (from 46,444 in 2005 to 36,005 in 2015 and to 20,446 in 2022). Mergers are evident in both groups of institutions. (Deutsche Bundesbank, 2023)

Credit institutions have recovered from the 2008 banking crisis, but are also struggling with the issues of digitalization and the associated technological progress as well as increasing competition, the rising regulatory burden

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and low interest rates for many years. Looking at the earnings situation of German banks, it is clear that savings banks and cooperative banks in particular are heavily dependent on net interest income. (Kowallik, Matthias, 2022)

Since 2022, the ECB took several interest rate steps to restore monetary stability or fight inflation, so that in 2023 one no longer speaks of a low interest rate level. This is easing the burden on the income statements of many savings banks and banks. However, experts and bank managers continue to see significant challenges in the banking sector and are pursuing different strategies to meet the challenges of the future. While some want to improve their results by investing in sales, among other things, others are focusing on consistent cost management. However, it is noted that managers of banks, regardless of whether they are more likely to pursue the revenue enhancement strategy or the cost reduction strategy, describe a common major problem of the future: Keeping and recruiting skilled employees. (Peichl *et al.*, 2022).

## 2. INTRODUCTION THEORETICAL BACKGROUND

The savings banks, on the other hand, hold a substantial market share of over 50%, spread across more than 300 independent entities. Their strength lies in their local branch infrastructure, which allows them to cater to the specific needs of their communities. (Kowallik, Matthias, 2022) While the digital age has ushered in claims that physical branches are no longer necessary, it remains a fact that very few customers are willing to entrust their finances solely to tech giants like Amazon or Google. Direct banks are recording strong growth in the number of customers. In addition, it is not yet possible to predict the consequences of the introduction of the digital euro. (ECB, 2021)

The evolving banking landscape and the unique circumstances of savings banks underscore the growing consensus among experts that a shortage of qualified workers looms on the horizon. Many bank boards are already grappling with the challenge of filling key positions, and the working environment has been significantly reshaped by the COVID-19 pandemic. Companies across various sectors now offer their employees the option to work remotely, and some employees have even expressed a preference for this arrangement. This shift has transformed the concept of traditional workplaces. As a result, the demand for skilled workers and the changing dynamics of workspaces pose substantial challenges for savings banks, which serve as major employers in their respective regions. It is crucial that, particularly for this significant banking sector, research efforts come to the forefront. Currently, there is a noticeable dearth of research in the branch banking sector. Given the significant changes in working conditions triggered by the pandemic and the pressing shortage of skilled professionals, research in this domain becomes increasingly relevant. (Ozimek, 2020).

Therefore, it is considered a unique selling proposition for manager of a savings bank, to actively engage in research endeavors and contribute to bridging the existing research gap. This proactive approach not only benefits the bank but also aids in addressing the challenges posed by an evolving banking landscape and a shifting workforce.

The future strategy of Savings Banks is to continue the emphasis on common welfare, regionality and thus "reliability and proximity" to the customers. In addition, the digitalization trend is taken into account, by focusing a Germany-wide strategy upon it. Digitalization issues are very important for budget distribution, whereby the bank comparison shows that it is well positioned. As part of the digitalization strategy, many standardizable business processes will be transferred to the online channel. In addition to the focus on efficiency, the current business strategy of the organization focuses on the heading "increasing customer satisfaction" and sets this with a concrete target. A further project is to improve this potential in commercial customer clientele by offering more holistic services. It is questionable in how far the target direction "permanent contact person, the comprehensive advice and high-quality products" is up-to-date for customers and financially sustainable for the bank in the medium term. Current trends in savings banks also show that the flow of customers should be partially directed. The savings banks see themselves as the most important financial partner of the private clientele and the middle class. Based on the 200-year history, today Savings Banks are very different from companies created for the sole purpose of profit. (Fahrenschon, 2016; Pertl, 2019)

Surveys underline that Savings Banks and cooperative banks may benefit from their respective branch structure. The German banking market can look forward to solid earnings potential. When comparing the groups of institutions, it should be noted that the specialized institutes, cooperative banks and Savings Banks in particular have a good cost-income ratio. Big banks, on the other hand, show not such a good ratio. (Deutsche Bundesbank, 2022, p. 24)

However, a valid future forecast is difficult. Financial experts predict death of banks from 1900 to 150-300 institutions in the next 10-15 years, thus indicating the process of consolidation. Nevertheless, it remains to be seen whether this prediction will come true, as the German banking market is untypical. Morning Stanley notes in a study that, for example, in Belgium and the Netherlands over 80% of the market is made up of the five largest French banks,

whereas in Germany the three largest listed institutions Deutsche Bank, Commerzbank and Hypo Vereinsbank (UniCredit) make up only 15% of the market share. (Frühauf, 2018).

Current earnings forecasts of local banks show in practice that the results of banks are developing very well. (European Banking Authority, 2023, p. 11) Thus, there is generally no need for a merger due to a lack of earnings. Nevertheless, it can be observed that in some cases expert positions in the respective banks can no longer be filled, which can lead to a higher burden on employees, especially at smaller institutions. In order to prevent this situation, as well as the poaching of employees, from developing into a vicious circle, it seems obvious that employee satisfaction and the retention of experts are existentially important for regional banks. (Ali and Anwar, 2021; Loan, 2020).

Es ist auf Basis der vorhandenen Forschung davon auszugehen, dass die Zufriedenheit der Mitarbeitenden eine Bedeutung hat (Atchison and Lefferts, 2006) und sich letztlich auch auf die Zufriedenheit der Kunden auswirkt. (Kurdi et al., 2020).

### 3. PURPOSE, AIM, MODEL

After highlighting the topicality, the purpose is described. The following question arises: How does employees' job satisfaction in regional banks influence the intention to terminate? What are the effects of colleagues, supervisor, job, working conditions, organization and performance, development, salary?

This research aims to develop a model for managers for more successful retaining employees in times of skills shortages in regional banks, which can be achieved through higher job satisfaction of employees and higher organizational commitment.

The main Hypothesis claims that Employees' job satisfaction influences the organizational commitment and the intention to terminate. The study aims to defend the thesis that savings bank's employee's intention to terminate is lower if the employees' satisfaction (for example with the working conditions) is higher.

Based on literature research and initial expert interviews, the elements of employee job satisfaction, organizational commitment and the intention to terminate were focused on for the savings bank.

The influencing, independent variable is measured in subcategories, whereby the survey is conducted via a survey. More on this in a moment within the framework of the methodology. The extent to which age or gender, for example, are significant is also examined.



**Method:** Questionnaires of bank employee (primary data)

**Basis:** Expert interviews, survey job satisfaction and organizational commitment

Author graphic

Fig. 1. Job satisfaction



#### 4. NOVELTY AND LIMITATIONS

The Novelities are further developed of cause-effects between employees' job satisfaction and intention to terminate. Identification of current representative subcategories colleagues, supervisor, job, working conditions, organization and performance, development, salary. The Differentiation of potentially influential parameter gender, education, age, apprenticeship and job experience.

But there are also some Limitations. In order to specify the result, limits must be set within the framework of the research work. For the reasons described in the Introduction, only the German banking market is examined. Differences between different regions of Germany are not analyzed (different income structures of customers and different political currents).

#### 5. CONCLUSIONS

The results are summarized as follows:

- Research examines employee satisfaction, organizational commitment and the intention to terminate
- Based on the special organizational structure of banks in Germany, most employees work at savings banks. Since these are accordingly very dependent on employees working there and not quitting, the survey results are significant
- Since, based on existing research, job satisfaction has a fundamental influence on organizational commitment and on the intention to terminate
- By combining the theoretical foundation in the theoretical framework and with the help of the expert interviews and finally by linking it to the primary research I will
- proof that the organization of savings banks entails an importance of employee satisfaction
- evidence that employee satisfaction is composed of different elements
- proof that organizational commitment of employees in savings banks have a meaning
- Show causal connection between employee satisfaction, the organizational commitment and the intention to terminate
- And proof that managers and executives can improve their employee's retention
- influences of age, gender, education and work experience, whereby these have varying degrees of influence.

The work is based on broad theoretical research that examines employee satisfaction and the intention to terminate. Based on the special organizational structure of banks in Germany, most employees work at savings banks. Since these are accordingly very dependent on employees working there and not quitting, the survey results are significant. Since, based on existing research, job satisfaction has a fundamental influence on on the intention to terminate.

#### References

- [1] Ali, B.J. and Anwar, G. (2021), "An Empirical Study of Employees' Motivation and Its Influence Job Satisfaction", SSRN Scholarly Paper, Rochester, NY, 8 April.
- [2] Atchison, T. and Lefferts, E. (2006), "The prediction of turnover using Herzberg's job satisfaction technique", *Personnel Psychology*, Vol. 25, pp. 53–64, doi: 10.1111/j.1744-6570.1972.tb01090.x.
- [3] Deutsche Bundesbank. (2022), "Current Monthly Reports", available at: <https://www.bundesbank.de/en/publications/reports/monthly-reports/current-monthly-reports--764440> (accessed 14 October 2023).
- [4] Deutsche Bundesbank. (2023), "Bankstellenentwicklung im Jahr 2022", available at: <https://www.bundesbank.de/de/presse/presenotizen/bankstellenentwicklung-im-jahr-2022-912656> (accessed 14 October 2023).
- [5] ECB. (2021), "The present and future of money in the digital age".
- [6] European Banking Authority. (2023), "EU-wide stress testing", *EU Wide Stress Results*, available at: <https://www.eba.europa.eu/risk-analysis-and-data/eu-wide-stress-testing> (accessed 14 October 2023).
- [7] Fahrenschon, G. (2016), "Zwischen Niedrigzinsen, Regulierung und Digitalisierung: Wie die Sparkassen-Finanzgruppe die Nummer 1 beim Kunden bleibt", *Die Neue Welt Der Banken: Münsteraner Bankentage 2015*, Springer, pp. 1–12.
- [8] Frühauf, M. (2018), "Wandel für Kreditinstitute: Deutschland steht Bankensterben bevor", *FAZ.NET*.
- [9] Kowallik, Mathias. (2022), Titel Der Arbeit: Zinsbuchsteuerung in Regionalbanken-Eine Analyse Zur Weiterentwicklung Der Steuerungspraxis, Otto-von-Guericke-Universität Magdeburg.
- [10] Kurdi, B., Alshurideh, M. and Alnaser, A. (2020), "The impact of employee satisfaction on customer satisfaction: Theoretical and empirical underpinning", *Management Science Letters*, Vol. 10 No. 15, pp. 3561–3570.
- [11] Loan, L. (2020), "The influence of organizational commitment on employees' job performance: The mediating role of job satisfaction", *Management Science Letters*, Vol. 10 No. 14, pp. 3307–3312.
- [12] Ozimek, A. (2020), "The Future of Remote Work", SSRN Scholarly Paper, Rochester, NY, 27 May, doi: 10.2139/ssrn.3638597.

- [13] Peichl, A., Sauer, S. and Wohlrabe, K. (2022), “Fachkräftemangel in Deutschland und Europa–Historie, Status quo und was getan werden muss”, *Ifo Schnelldienst*, München: ifo Institut-Leibniz-Institut für Wirtschaftsforschung an der ..., Vol. 75 No. 10, pp. 70–75.
- [14] Pertl, P. (2019), *Regionalbanken Zwischen Digitalisierung, Regulierung Und Niedrigzinsumfeld: So Bleiben Sparkassen Und Genossenschaftsbanken Profitabel*, Springer.
- [15] Statista available at <https://de.statista.com/statistik/daten/studie/209356/umfrage/anzahl-der-zweigstellen-von-kreditinstituten-in-deutschland/> (accessed 10 October 2023)

# Evaluation of Strategies for the Information Communication Technologies Sector in Turkey with Fuzzy MCDM Methods

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## Abstract

The OECD defines the Information and Communication Technologies (ICT) sector as a collection of service and manufacturing industries that electronically display, transfer, and store information and data. The continually changing and evolving ICT sector, which permits the birth of numerous innovations, improves the well-being of individuals, businesses, and countries by directly and indirectly influencing our everyday lives and business practices. The importance of the ICT sector is growing all over the world, and many countries regard it as a strategic sector. In Turkey, actions done by governmental organizations in the ICT sector are critical to the sector's development. The increase in productivity and innovation observed in sectors that use ICT intensively indicates that when the share of the sector in the national economy increases, it will contribute to the growth of the economy through total factor productivity. In this context, the aim of this study is to present a SWOT analysis of the ICT sector in Turkey and to prioritize the strategies obtained in this analysis with the integrated fuzzy Analytic Hierarchy Process (AHP) - Complex Proportional Assessment (COPRAS) methodology. The composite structure of the SWOT factor evaluation includes several different and contradicting criteria. However, when information is unclear, it is difficult to choose and rank options. Decision-makers (DMs) sometimes struggle to express their thinking with crisp numbers. Furthermore, DMs may express themselves more freely using fuzzy numbers. It eliminates the uncertainty associated with this Multi-Criteria Decision Making (MCDM) problem. An application is provided to demonstrate the potential of the proposed research approach. Finally, the application outcomes are shown, together with concluding remarks and future views.

**Keywords:** fuzzy logic, information communication technology, MCDM methods, SWOT analysis

## 1. INTRODUCTION

Information and Communication Technologies (ICT) is the integrity of all hardware, software, and related services used in the processes of creating, storing, distributing, accessing, and managing information and knowledge. The sector within the scope of this definition has recently become one of the sectors in which investors and policymakers are most active. This interest stems from the fact that the sector is at the heart of innovation, competitiveness, and economic growth [1,2].

The ICT sector is a horizontal sector that affects all industries in an economy and plays a facilitating and productivity-enhancing role. In a world moving from an industrial society where capital is important to an information society where information is important, productivity and innovation are the key drivers of growth. Through innovations, ICT plays a role in opening the way for the growth of existing and upcoming technologies and business

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areas, enhancing productivity and competitiveness [2,3]. Following the rapid developments in ICT since the 1970s, the global ICT sector size reached USD 4.1 trillion in 2011. The sector in Turkey is expected to be worth USD 30.3 billion. The fact that Turkey, the world's 17th largest country in terms of economic size, has a population and economy larger than 1% of the total, although its part of the global ICT market remains at 0.75%, demonstrates the sector's development potential in Turkey. When the sub-sectors of the ICT market in Turkey are analyzed, it is seen that the Information Technologies sector, which has a share of 0.4% in the global market, has a higher growth potential [4,5].

The importance of the ICT sector is growing all around the world, and many governments consider it a strategic sector. In Turkey, actions done by governmental organizations in the ICT sector are critical to the sector's development. Recently, very important steps have been taken to emphasize R&D and innovation in the sector and to support the entrepreneurship environment. The increase in productivity and innovation observed in sectors that use ICT intensively indicates that when the share of the sector in the national economy increases, it will contribute to the growth of the economy through total factor productivity.

In this context, in this study, a SWOT analysis [6] is presented to comprehensively reveal the ICT sector in Turkey. In the literature, Kurttila et al. [7] proposed the first quantified SWOT methodology with the integration of the Analytic Hierarchy Process (AHP). In this study, the fuzzy AHP- Complex Proportional Assessment (COPRAS) methodology integrated with SWOT analysis is used to prioritize the factors and strategies. The composite structure of the SWOT factor evaluation includes several different and contradicting criteria. However, when information is unclear, it is difficult to choose and rank options. Decision-makers (DMs) sometimes struggle to express their thinking with crisp numbers. Furthermore, DMs may express themselves more freely using fuzzy numbers. It eliminates the uncertainty associated with this Multi-Criteria Decision Making (MCDM) problem.

The aim of this study is to present a SWOT analysis of the ICT sector in Turkey and to prioritize the strategies obtained in this analysis with the fuzzy AHP-COPRAS methodology. The following is the structure of the paper: The next section summarizes the research methodology. Section 3 discusses the application, and the last section ends the study.

## 2. RESEARCH METHODOLOGY

The proposed methodology in this study is divided into three steps:

- **Step 1.** Determination of SWOT factors of the ICT sector in Turkey.
- **Step 2.** Prioritization of SWOT factors with the fuzzy AHP method.
- **Step 3.** Prioritization of the strategies with the fuzzy COPRAS method.

Fig. 1 illustrates this research methodology.

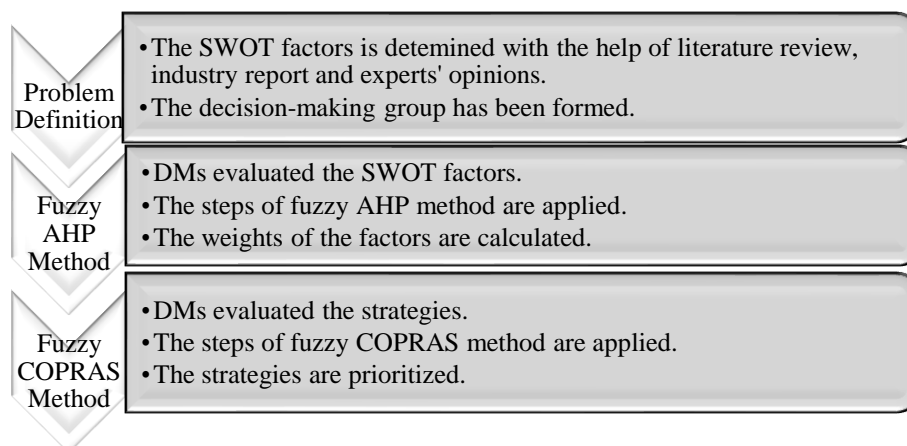


Fig. 1. The steps of the proposed methodology

### 2.1. SWOT Analysis

Albert S. Humphrey, an American business and management consultant, introduced SWOT analysis in the 1960s. It is a critical tool for dealing with complicated strategic issues and organizing and properly presenting information for decision-making [9]. Simultaneously, the organization is examined in terms of its internal and external environments, since this tool identifies internal and external aspects that are critical in accomplishing organizational

goals. SWOT analysis aims to enhance strengths, remove or minimize weaknesses, assess opportunities, and identify threats [10,11].

SWOT analysis has two main benefits: First, it identifies the situation in which the subject to be analyzed exists. In this context, the strengths and weaknesses of the subject and the opportunities and threats it faces are revealed. This is called "current situation" analysis. The second is that it helps to predict and determine the future state of the subject with the help of an analytical technique. This is called "future situation" analysis. It also plays a role in identifying factors that may affect long-term growth for businesses, eliminating negative ones, and determining the most appropriate strategy for the conditions of the business [12].

2.2. Fuzzy AHP method

Saaty [13] suggested AHP. AHP is a strong decision-making approach for determining priority among several criteria. In a fuzzy context, the flexibility of AHP enables versatility.

The fuzzy AHP steps are as follows:

**Step 1.** Create the evaluation matrix using binary comparison. In the fuzzy AHP technique, fuzzy linguistic terms are employed to evaluate the criteria. Table 1 lists them along with their abbreviations.

Table 1. Linguistic scale for Fuzzy AHP [14]

Linguistic term	Abb.	TFN
Equal	E	(1,1,1)
Equally Important	EI	(1,1,2)
Weakly More Important	WMI	(2,3,4)
Strongly More Important	SMI	(4,5,6)
Very Strongly More Important	VSMI	(6,7,8)
Absolutely More Important	AMI	(8,9,10)

**Step 2.** Convert linguistic expressions into triangular fuzzy numbers (TFN). The membership function of  $\tilde{A}=(l,m,u)$  is as follows [15]:

$$\mu_{\tilde{A}}(x) = \begin{cases} \frac{(x-l)}{(m-l)} & \text{if } l \leq x \leq m, \\ \frac{(u-x)}{(u-m)} & \text{if } m \leq x \leq u, \\ 0 & \text{otherwise.} \end{cases} \tag{1}$$

**Step 3.** Define  $\alpha$ -cut fuzzy pairwise comparison matrices by using  $\alpha$ -cut method, ( $\alpha=0.5$ ;  $\mu=0.5$ ).

**Step 4.** Calculate the optimality index as [16]:

$$\tilde{a}_{ij}^{\alpha} = \mu a_{ij}^{\alpha} + (1 - \mu) a_{ij}^{\alpha}, \quad \forall \alpha \in [0,1]. \tag{2}$$

**Step 5.** Normalize the matrix and calculate the local weight vector [17].

**Step 6.** Compute the Best Nonfuzzy Performance Value (BNP) of each factor to obtain single values from TFNs [18]:

$$BNP_i = \frac{[(u_i-l_i)+(m_i-l_i)]}{3} + l_i, \quad \forall i. \tag{3}$$

Compute the consistency ratio (CR) with:

$$CI = \frac{\lambda_{max}-n}{n-1}. \tag{4}$$

$$CR = \frac{CI}{RI}. \tag{5}$$

$CI$  is a consistency index,  $\lambda_{max}$  is the biggest eigenvector of the matrix.  $n$  is the number of factors, and  $RI$  is the random index. For reliable results, the  $CR$  should be less than 0.1.

**Step 7.** To get local weights, repeat the same methods for sub-criteria. Multiply the sub-criteria weights by the major criteria weights to get the final weights.

### 2.3. Fuzzy COPRAS method

Zavadskas et al. [18] proposed the COPRAS method and proved its validity. It assesses options by arranging them in descending order of priority and utility ratings. It is also an approach based on distance. Zavadskas and Antucheviciene [19] offer the COPRAS method with fuzzy logic for the evaluation of rural building regeneration alternatives in the literature. The following are the method's sequential steps:

**Step 1.** The fuzzy scale shown in Table 1 is used by DMs to evaluate the alternatives. The centre-of-area approach is used to defuzzify these fuzzy numbers. The crisp value  $x_{ij}$  can be found using (6).

$$x_{ij} = \frac{|(U_{x_{ij}} - L_{x_{ij}}) + (M_{x_{ij}} - L_{x_{ij}})|}{3} + L_{x_{ij}} \quad (6)$$

**Step 2.** Calculate the normalized decision matrix with (7).

$$x_{ij}^* = \frac{x_{ij}}{\sum_{i=1}^m x_{ij}} \quad (7)$$

**Step 3.** Compute the weighted normalized decision matrix with (8).

$$d_{ij} = x_{ij}^* \cdot w_j \quad (8)$$

**Step 4.** Calculate the  $S_i^-$  and  $S_i^+$  values using (9) and (10) for both beneficial and non-beneficial criteria.

$$S_{i+} = \sum_{j=1}^k d_{ij} \quad (9)$$

$$S_{i-} = \sum_{j=k+1}^n d_{ij} \quad (10)$$

**Step 5.** Compute the relative importance values ( $Q_i$ ) for each alternative with (11).

$$Q_i = S_{i+} + \frac{\sum_{i=1}^m S_{i-}}{S_{i-} * \sum_{i=1}^m \frac{1}{S_{i-}}} \quad (11)$$

**Step 6.** Obtain the biggest relative priority ( $Q_{max}$ ) value.

**Step 7.** Calculate the performance index ( $P_i$ ) of each alternative with (12).

$$P_i = \left[ \frac{Q_i}{Q_{max}} \right] \times 100\% \quad (12)$$

## 3. APPLICATION OF THE METHODOLOGY

The importance of the ICT sector is increasing all over the world and the sector has been adopted as a strategic sector by many countries. In Turkey, initiatives taken by public bodies towards the ICT sector are significant for the development of the sector. For Turkey to become an "ICT hub" in the region, the sector's needs should be approached from a strategic perspective, as in many other countries. To improve the investment environment in the sector, relevant solution proposals should be implemented without wasting time.

3.1. Phase 1: SWOT analysis of the ICT sector in Turkey

The proposed methodology is demonstrated using an application to demonstrate its applicability. The SWOT analysis for the ICT sector in Turkey [4] is shown in Fig. 2. There are five sub-factors under each main factor. The strategies determined as a result of this analysis are as follows [1,3,4]:

- Institutional structuring and regulatory strategy (STR1)
- ICT infrastructure development strategy (STR2)
- Strategy to increase R&D projects (STR3)
- Continuous innovation strategy (STR4)

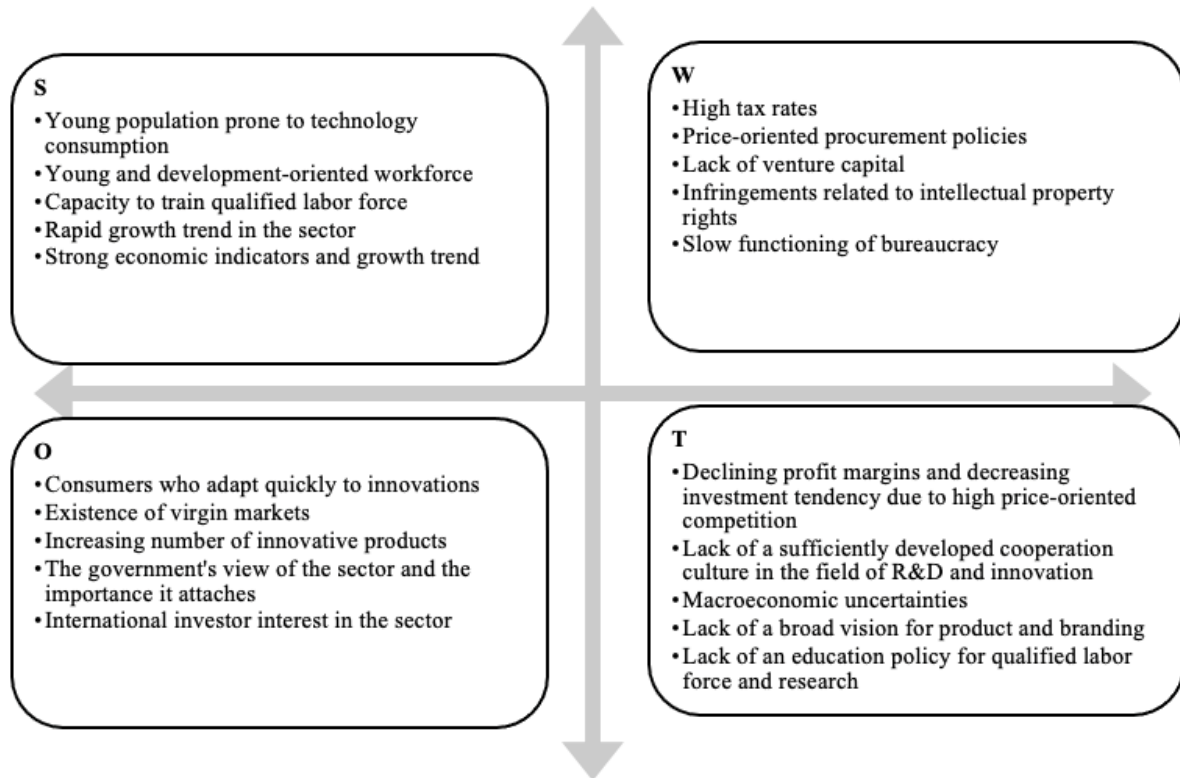


Fig. 2. SWOT factors for the ICT sector in Turkey

3.2. Phase 2: Factors' weight calculation with fuzzy AHP method

To begin, the fuzzy comparison matrix between main factors in Table 1 is formed using triangular fuzzy numbers. Table 2 depicts the comparison matrix for the main criteria.

Table 2. Evaluation of main criteria

	Linguistic Expressions				Fuzzy Numbers			
	S	W	O	T	S	W	O	T
S	E	WMI	EI	SMI	(1,1,1)	(2,3,4)	(1,1,2)	(4,5,6)
W	-	E	-	EI	(1/4,1/3,1/2)	(1,1,1)	(1/6,1/5,1/4)	(1,1,2)
O	-	SMI	E	WMI	(1/2,1,1)	(4,5,6)	(1,1,1)	(2,3,4)
T	-	-	-	E	(1/6,1/5,1/4)	(1/2,1,1)	(1/4,1/3,1/2)	(1,1,1)

The steps of the fuzzy AHP method are applied with (1)-(5). Equations are used to create the  $\alpha$ -cut matrices ( $\alpha = 0.5$ ;  $\mu = 0.5$ ), which are then normalized. After that, CR is tested. Table 3 displays the normalized weights.

Table 3. The normalized decision matrix for the main criteria

	S	W	O	T
S	0.429	0.308	0.486	0.476
W	0.161	0.103	0.068	0.143
O	0.321	0.513	0.324	0.286
T	0.089	0.077	0.122	0.095

These procedures are repeated for each sub-criteria, and the final global weights for each criterion are computed. Table 4 summarizes the significance of the criteria.

Table 4. Weights of criteria

Main factors	Weights	Sub-factors	Global weights	Ranking
S	0.425	S1	0.130	2
		S2	0.080	6
		S3	0.036	10
		S4	0.093	3
		S5	0.085	5
W	0.118	W1	0.029	13
		W2	0.046	7
		W3	0.017	15
		W4	0.014	16
		W5	0.012	17
O	0.361	O1	0.035	11
		O2	0.168	1
		O3	0.089	4
		O4	0.033	12
		O5	0.036	9
T	0.096	T1	0.027	14
		T2	0.039	8
		T3	0.011	18
		T4	0.009	20
		T5	0.010	19

According to the results of the fuzzy AHP, the most crucial criterion is “Existence of virgin markets (O2)”. The second one is “Young population prone to technology consumption (S1)”. The third one is “Rapid growth trend in the sector (S4)”.

### 3.3. Phase 3: Ranking of the strategies with the fuzzy COPRAS method

DMs used the linguistic terms in Table 1 to evaluate the strategies for the SWOT factors. Table 5 displays the DMs' assessments of the strategies.

Table 5. Evaluations of the strategies

	S1	S2	S3	S4	S5	W1	W2	.	.	.	.	.	O4	O5	T1	T2	T3	T4	T5
STR1	EI	EI	WMI	AMI	AMI	VSMI	WMI	.	.	.	.	.	VSMI	SMI	VSMI	SMI	EI	WMI	WMI
STR2	SMI	WMI	WMI	WMI	SMI	SMI	WMI	.	.	.	.	.	AMI	VSMI	AMI	VSMI	SMI	WMI	EI
STR3	WMI	SMI	EI	EI	WMI	EI	SMI	.	.	.	.	.	AMI	SMI	WMI	EI	WMI	SMI	SMI
STR4	EI	WMI	EI	WMI	EI	SMI	AMI	.	.	.	.	.	SMI	VSMI	VSMI	SMI	EI	VSMI	AMI



Table 5 contains linguistic terms that have been transformed into fuzzy numbers. Equation (6) is used to defuzzify these fuzzy numbers. The strategies' weighted normalized decision matrix is computed. Equations (9)-(12) are used to calculate the values of  $Q_i$ ,  $Si+$ ,  $Si-$ , and  $P_i$ . Table 6 shows the results of the fuzzy COPRAS method.

Table 6. The results

	Si-	Si+	$Q_i$	$P_i$	Ranking
STR1	2.164	2.574	5.407	94.724	2
STR2	2.634	3.381	5.708	100.000	1
STR3	2.179	2.187	4.999	87.581	3
STR4	3.023	1.857	3.885	68.065	4

The "ICT infrastructure development strategy (STR2)" is the most appropriate strategy at the end of the fuzzy COPRAS method. The second, third, and fourth strategies are prioritized by STR1, STR3, and STR4, accordingly.

#### 4. CONCLUSION

There are great opportunities for Turkey to reach its ICT targets. If the solution suggestions created for improvement areas are reviewed, it is expected that the sector will make significant progress toward realizing its full potential and will continue to contribute to Turkey's competitiveness and economic growth. Turkey has a lot of potential because of its people, advantageous geographical position, modern logistical infrastructure, and comparatively low cost structure.

In this study, a SWOT analysis of the ICT sector in Turkey was presented. These SWOT factors were examined using fuzzy MCDM methods (i.e. fuzzy AHP and fuzzy COPRAS) to determine the weights of the factors and rank the strategies. The usefulness of the technique was demonstrated through an application, and the outcomes of this study were presented. "ICT infrastructure development strategy (STR2)" was identified as the most appropriate strategy.

Consider the dependency and interaction of the elements, and then expand our study using the Analytic Network Process (ANP) technique. The problem may be handled utilizing different fuzzy MCDM approaches to compare the other findings with our result from the second perspective.

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#### References

- [1] Charfeddine, L., & Umlai, M. (2023). ICT sector, digitization and environmental sustainability: A systematic review of the literature from 2000 to 2022. *Renewable and Sustainable Energy Reviews*, 184, 113482.
- [2] Zheng, J., & Wang, X. (2021). Can mobile information communication technologies (ICTs) promote the development of renewables?-evidence from seven countries. *Energy Policy*, 149, 112041.
- [3] Kathuria, V. (2016). Access and investment in the ICT sector for developing countries. *Law and Development Review*, 9(1), 1-27.
- [4] YASED. (2012). *Information and Communication Technologies on the way to 2023 Goals*
- [5] Bukvić, I. B., & Babić, I. Đ. (2021). The Impact of Government Measures on Business Development in the ICT sector. *International Journal of Industrial Engineering and Management*, 12(1), 63-72.
- [6] Hill, T., & Westbrook, R. (1997). SWOT analysis: it's time for a product recall. *Long range planning*, 30(1), 46-52.
- [7] Kurttila, M., Pesonen, M., Kangas, J., & Kajanus, M. (2000). Utilizing the analytic hierarchy process (AHP) in SWOT analysis—a hybrid method and its application to a forest-certification case. *Forest policy and economics*, 1(1), 41-52.
- [8] Zadeh, L. A. (1988). Fuzzy logic. *Computer*, 21(4), 83-93.
- [9] Learned, E. P. (1969). "Business policy: Text and Cases", RD Irwin.
- [10] Jackson, S. E., Joshi, A., Erhardt, N. L. (2003). "Recent research on team and organizational diversity: SWOT analysis and implications", *Journal of management*, 29(6), pp. 801-830.
- [11] Dyson, R. G. (2004). "Strategic development and SWOT analysis at the University of Warwick", *European Journal of Operational Research*, 152(3), pp. 631-640.

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- [12] Büyüközkan, G., Mukul, E., & Kongar, E. (2021). Health tourism strategy selection via SWOT analysis and integrated hesitant fuzzy linguistic AHP-MABAC approach. *Socio-Economic Planning Sciences*, 74, 100929.
- [13] Saaty, T. L. (1980). *The Analytical Hierarchy Process*, Planning, Priority, Resource Allocation. RWS Publications, USA.
- [14] Kulak, O. and Kahraman, C. (2005). Fuzzy multi-attribute selection among transportation companies using axiomatic design and analytic hierarchy process. *Information Sciences*, 170, 191–210.
- [15] Wu, H., Tzeng, G., and Chen, Y. (2009). A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard. *Expert Systems with Applications*, 36(6), 10135-10147.
- [16] Lee, A. R. (1999). Application of modified fuzzy AHP method to analyze bolting sequence of structural joints. UMI Dissertation Service, A Bell & Howell Company.
- [17] Büyüközkan, G., and Çifçi, G. (2012), A combined fuzzy AHP and fuzzy TOPSIS based strategic analysis of electronic service quality in healthcare industry, *Expert Systems with Applications*, 39(3), 2341-2354.
- [18] Zavadskas, E. K., Kaklauskas, A., & Šarka, V. (1994). The new method of multicriteria complex proportional assessment of projects. *Technological and economic development of economy*, 1(3), 131-139.
- [19] Zavadskas, E. K., & Antucheviciene, J. (2007). Multiple criteria evaluation of rural building's regeneration alternatives. *Building and Environment*, 42(1), 436-451.

# An Integrated Fuzzy MCDM Methodology for Assessment of 5G Solutions

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## Abstract

In recent years, 5G solutions have offered faster speed, lower latency, and the ability to connect considerably more devices than previous generations of mobile technology, offering executives a glance at a more efficient and productive future. Organizations need to assess the impacts of 5G solutions. This paper aims to help organizations in assessing the 5G solutions by using an analytical approach. An integrated fuzzy multi-criteria decision-making (MCDM) methodology based on a group decision-making approach is applied. The fuzzy analytic hierarchy process (AHP) method is used to weight the 5G solutions assessment criteria. The fuzzy impact matrix method is implemented to rank the 5G solutions. Finally, a case study is presented to verify the potential of the methodology. At the end of the case study, fast and low latency internet is found to be the most efficient 5G solution.

**Keywords:** 5G, analytic hierachy process, digital technologies, fuzzy sets, MCDM.

## 1. INTRODUCTION

Wireless communication technologies and mobile devices, which have been and continue to be developed from the past to the present, are widely used today. Cellular network providers delivering wireless communication services use new generation (i.e., 3G, 4G, 5G) network technologies developed to meet the increasing number of devices and communication load and provide the necessary infrastructure. 5G can be defined as the faster, high-capacity, and low-latency connection supporting the future industry and society with artificial intelligence (AI) and the Internet of Things (IoT) [1].

Significant economic and social value can be realized through the deployment of 5G networks. According to Accenture's report [2], the impact of 5G on the European economy will drive up to €2.0 trillion in incremental gross output (sales) growth between 2021 and 2025. Technological applications enabled by a set of core functional characteristics will both facilitate industrial advances, increase their profits, and enhance city and citizen experiences. To accelerate 5G adoption, new models of collaboration between stakeholders are needed, as well as transparent methodologies for estimating 5G's social value creation that will improve the business case [3].

5G technology will bring many benefits in different application areas, such as artificial intelligence, autonomous vehicles, and smart homes in different sectors such as energy, healthcare, and education. In this context, 5G solutions affect our environment and society. The effects of 5G solutions in the fields of environment, social life, and governance also serve the Sustainable Development Goals [1]. Therefore, it is vital for organizations to assess the impacts of 5G

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solutions and to decide on the most appropriate 5G solution for themselves. This paper aims to present a decision-making approach for assessing the 5G solutions.

In the 5G solutions assessment problem, there are multiple factors to be considered at the same time. Thus, a multi-criteria decision-making (MCDM) methodology is presented as an analytical approach. In this study, an integrated fuzzy MCDM methodology is implemented. Since the assessments collected from the experts are difficult to express in numbers and the evaluations consist of partial expressions that are not precise, fuzzy logic is used. In this way, the analytical approach is made suitable for daily life.

Some papers have integrated the 5G subject and MCDM methods in the related literature. Xu et al. [4] applied the Simple Additive Weighting (SAW) method for evaluating 5G network strategies. Peng et al. [5] integrated Pythagorean fuzzy combined compromise solution (CoCoSo) and criteria importance through inter-criteria correlation (CRITIC) methods for evaluating 5G industries. Bakmaz et al. [6] evaluated 5G network slices by implementing the technique for order preference by similarity to ideal solution (TOPSIS) method. Liang et al. [7] applied an integrated Bayesian best-worst method (BBWM) and difference-quotient gray relational analysis (DQ-GRA) approach to evaluate 5G stations' performances.

In this study, firstly, the impacts of the existing solutions within the scope of 5G were obtained by conducting literature research and reviewing industry reports. The 15 criteria obtained are under three main criteria: environment, social, and governance. On the other hand, 5G technologies with potential impacts in these areas were investigated, and six technologies were identified to be examined in this study. It aims to provide a more realistic method by considering the importance of the criteria in technology selection. For this reason, firstly, the weights of the expectations of the firms were found with the fuzzy analytic hierarchy process (AHP) method. The fuzzy AHP method is chosen to eliminate uncertainty and provide flexibility by using fuzzy logic. In the traditional AHP method, experts express the criteria using numbers. This makes the decision-making process difficult in problems with uncertainty. In the fuzzy AHP method, fuzzy linguistic expressions provide the experts with convenience and flexibility. Then, a fuzzy impact matrix was created, and experts were asked to evaluate this matrix using linguistic terms. As a result, it was determined which solutions most impact environmental, social, and governance criteria.

The paper is organized as follows. *Section 2* presents the methods used in our proposed approach. The case study is provided in *Section 3*. The concluding remarks are provided in the last section.

## 2. METHODOLOGY

The methodology of this paper contains three phases. Fig. 1 illustrates the research methodology. In the first stage, the 5G solutions evaluation criteria are developed by conducting a literature survey and taking the expert views. Then, 5G solution alternatives to be evaluated are determined. Afterward, the fuzzy AHP method is applied to calculate the criteria weights. In the last step, the alternatives are ranked by applying the fuzzy impact matrix method.

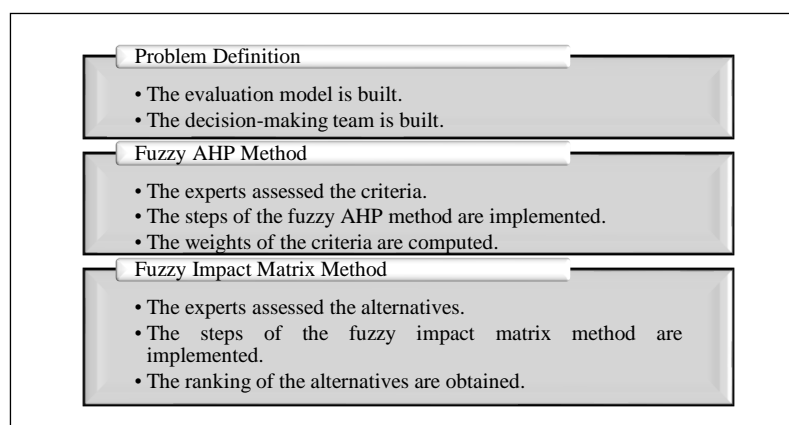


Fig. 1. The main phases of the methodology.

### 2.1. Evaluation model and alternatives

In addition to the measurable economic impacts resulting from its integration with vertical sectors, 5G solutions also trigger healing and transformative social impacts on society and the environment we live in. The effects of 5G

solutions in the fields of environment, social, and governance also serve the Sustainable Development Goals. With mobile broadband and ultra-reliable low-latency communication technologies explicitly developed in the information and communication sector, users are offered high-capacity, low-latency internet, and new potential usage areas are emerging. For this reason, industry-specific 5G is expected to provide high speed, high image quality, and low latency and offer new-generation media experiences to consumers [1].

In this study, in order to understand the impacts of 5G technologies, an evaluation model was created by analysing the studies and industry reports in the literature. In this model, there are three main criteria: environment, social, and governance. Furthermore, there exist fifteen sub-criteria below these main criteria. Fig 2. illustrates the hierarchical criteria structure of the study [1], [5], [7].

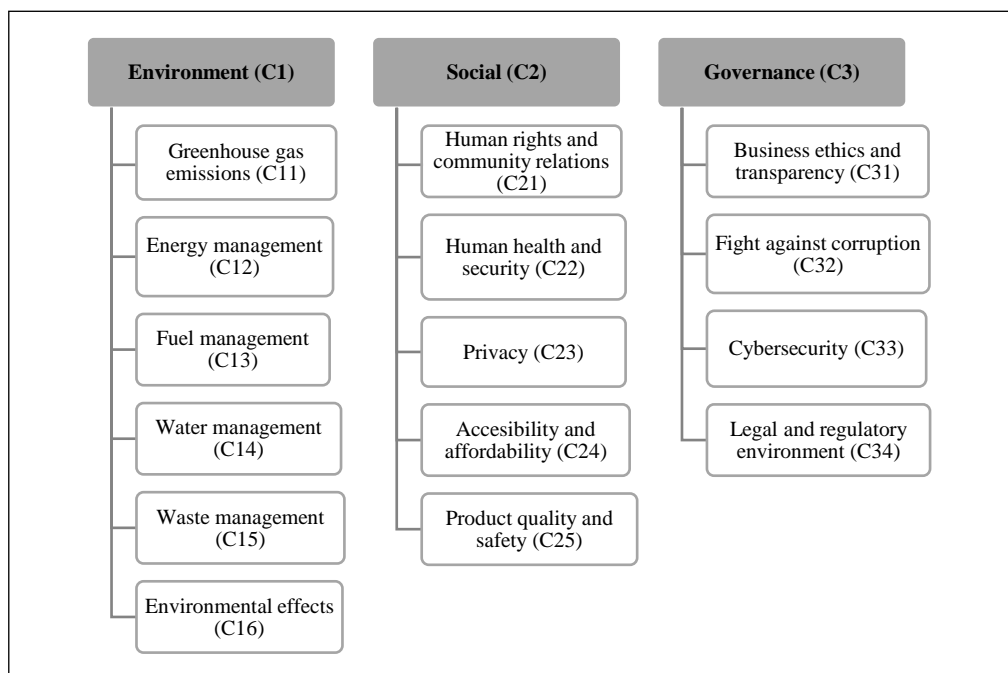


Fig. 2. The evaluation model.

The main criteria can be explained as:

- **Environment (C1):**

It is expected that 5G solutions will reduce carbon emissions and ensure efficient use of resources by supporting the optimum use of energy, especially in the production, energy, public and transportation sectors.

- **Social (C2):**

The social impacts of 5G will be observed, especially in health, education, and security. 5G will facilitate the lives of a significant segment of society with its use in distance education, remote treatment, and similar areas.

- **Governance (C3):**

5G has implications for governance regarding data and cybersecurity; It also impacts business ethics and transparency and the management of the legal environment.

In this paper, six 5G solution alternatives are determined as [1], [5]:

- **Fast and low latency internet (A1):**

5G promises users uninterrupted and fast internet from anywhere in their daily lives with improved mobile broadband and low latency. With low latency and increased speed, mobile experiences with performance problems such as multiple video calls, content viewing, and simultaneous use of multiple applications will be improved, and augmented/virtual reality applications will become widespread.

- **Remote work (A2):**

Remote working, which entered our lives with the pandemic, will become widespread, and jobs that require being together in a physical environment can be carried out remotely. For example, a design team will be able to work on a prototype with augmented/virtual reality to finalize the product.

- **Connectivity in rural areas (A3):**

5G infrastructure, with fixed wireless broadband technology, will be able to provide internet connection to regions where it is difficult to provide internet via fiber cable. As a solution to the cost of providing infrastructure to rural areas, attempts are being made to provide internet to these regions with unmanned aerial vehicles.

- **Wearable devices (A4):**

The gaming experience that becomes tangible with wearable devices offers significant opportunities for the gaming industry. Wearable devices connected to 5G will be able to add a new sensory dimension to media experiences. Communication will be possible with lower latency times that 4G technologies could not provide before, and a multi-player experience will be provided. For example, heat and pressure features can be integrated into an action game, providing players with a lifelike experience.

- **Augmented/virtual reality game (A5):**

With augmented and virtual reality, virtual objects can be used in games, and realistic images can be obtained. According to Intel's research [8], 90% of the revenue from augmented/virtual reality is expected to come from the gaming industry.

- **Broadband television broadcasts (A6):**

Increasing network capacity will increase operators' fixed broadband usage. Operators will be able to provide improved mobile infrastructure technologies and fixed broadband technologies to users from a shared infrastructure, thus making it possible to expand fixed broadband infrastructure with lower latency and speed for video and television broadcasts.

## 2.2. Fuzzy AHP method

**Step 1.** An evaluation matrix was created. Fuzzy linguistic terms and triangular fuzzy numbers (TFNs) applied in the fuzzy AHP method are given in Table 1.

Table 1. Fuzzy AHP linguistic scale [9]

Linguistic term	Abb.	TFN
Equal	E	(1,1,1)
Equally Important	EI	(1,1,2)
Weakly More Important	WMI	(2,3,4)
Strongly More Important	SMI	(4,5,6)
Very Strongly More Important	VSMI	(6,7,8)
Absolutely More Important	AMI	(8,9,10)

**Step 2.** Linguistic terms are transformed into TFNs. The structure of the membership function of  $\tilde{A}=(l,m,u)$  is provided as [10]:

$$\mu_{\tilde{A}}(x) = \begin{cases} \frac{(x-l)}{(m-l)} & \text{if } l \leq x \leq m, \\ \frac{(u-x)}{(u-m)} & \text{if } m \leq x \leq u, \\ 0 & \text{otherwise} \end{cases} \quad (1)$$

**Step 3.**  $\alpha$ -cut fuzzy pairwise comparison matrices are constructed by using  $\alpha$ -cut technique ( $\alpha=0.5; \mu=0.5$ ).

**Step 4.** The optimality index is calculated by using the following formulae [11]:

$$\tilde{a}_{ij}^{\alpha} = \mu a_{ij}^{\alpha} + (1 - \mu) a_{ij}^{\alpha}, \quad \forall \alpha \in [0,1] \quad (2)$$

**Step 5.** The matrix is normalized, and the local weight vector is calculated [12].

**Step 6.** For each criterion, the Best Nonfuzzy Performance (BNP) value is computed [13]:

$$BNP_i = \frac{[(u_i - l_i) + (m_i - l_i)]}{3} + l_i, \forall_i \tag{3}$$

The consistency ratios (CRs) are calculated by using the following formulae for checking the consistency of the assessment matrices:

$$CI = \frac{\lambda_{max} - n}{n - 1} \tag{4}$$

$$CR = \frac{CI}{RI} \tag{5}$$

where  $n$  indicates the number of factors,  $\lambda_{max}$  denotes the biggest eigenvector,  $RI$  indicates the random index, and  $CI$  denotes the consistency index.  $CR$  would be less than 0.1.

**Step 7.** Sub-criteria weights are derived by following the same steps. The final weights of the sub-criteria are calculated by multiplying the weights.

### 2.3. Fuzzy Impact Matrix Method

**Step 1.** Experts are asked to fill in the impact matrix using fuzzy linguistic expressions. Fuzzy linguistic expressions used to evaluate alternatives in the fuzzy impact matrix method in the study are given in Table 2 with their abbreviations.

Table 2. Fuzzy impact matrix linguistic scale [14]

Linguistic term	Abb.	TFN
No Effect	NE	(0,0,0.17)
Very Low Effective	VLE	(0,0.17,0.33)
Low Effective	LE	(0.17,0.33,0.5)
Moderately Effective	ME	(0.33,0.5,0.67)
Highly Effective	HE	(0.5,0.67,0.83)
Very Highly Effective	VHE	(0.67,0.83,1)
Excellently Effective	EE	(0.83,1,1)

**Step 2.** Based on the data in the influence matrix, linguistic expressions are converted into fuzzy numbers using triangular fuzzy numbers in Table 2.

**Step 3.** The resulting fuzzy impact matrix is weighted to take into account the importance of the criteria. In this step, the weighted impact matrix is calculated with the help of the following formula [12]:

$$\tilde{v}_{ij} = \tilde{r}_{ij} \otimes \tilde{w}_j \tag{6}$$

Here,  $\tilde{v}_{ij}$  represents the weighted impact matrix,  $\tilde{r}_{ij}$  indicates the fuzzy impact matrix, and  $\tilde{w}_j$  indicates the importance of the criteria. To add and calculate with fuzzy numbers, the following formula is used based on fuzzy logic arithmetic [13]:

$$[\underline{a}, \bar{a}] + [\underline{b}, \bar{b}] = [\underline{a} + \underline{b}, \bar{a} + \bar{b}] \tag{7}$$

For each alternative, first the summation is made separately for each main criterion (environment, social, governance), then overall.

**Step 4.** To obtain a single value from the collected triple fuzzy values, the defuzzification process is performed using (8). As a result of this process, the BNP value is calculated for each solution [13].

$$BNP_i = \frac{[(u_i - l_i) + (m_i - l_i)]}{3} + l_i, \forall_i \tag{8}$$

**Step 5.** The solution with the largest BNP value is the most suitable solution. According to BNP values, 5G solutions are listed for each main-criterion and in general.

### 3. CASE STUDY

This section shows a case study of a company from the Information and Communication Technology (ICT) sector. The name of the company will not be shared for confidentiality reasons. Company A is a well-known Turkish ICT company, and it is an integrated communications and technology services player in the region. It aims to offer a wide range of creative products and services through its unified, mobile, and fixed network platform.

For assessing the criteria and the alternatives, the managers from different departments of the company are chosen as experts. They all have sufficient experience and knowledge of 5G technologies and 5G solutions. Therefore, the case study is implemented by applying the following steps:

#### Step 1. Determination of evaluation criteria

The fifteen evaluation criteria have been summarized in *Section 2.1*.

#### Step 2. Determination of alternatives

The determined six alternatives have been summarized in *Section 2.1*.

#### Step 3. Assessments of experts for determining the criteria weights

Experts assessed the criteria by using linguistic scales given in Table 1. Table 3 displays the evaluation of the first expert for the main criteria.

Table 3. The evaluation of the experts for the main criteria

Main Criteria	Linguistic terms			TFNs		
	C1	C2	C3	C1	C2	C3
Environment (C1)	-	EI	WMI	1	(1,1,2)	(2,3,4)
Social (C2)		-	EI	(1/2,1,1)	1	(1,1,2)
Governance (C3)			-	(1/4,1/3,1/2)	(1/2,1,1)	1

#### Step 4. Calculation of criteria weights by applying the fuzzy AHP method

Steps 1-7 of the fuzzy AHP method given in *Section 2.2*. are applied to calculate criteria weights. Table 4 displays the criteria weights.

Table 4. The criteria weights

Main Criteria	Weights	Sub-Criteria	Local Weights	Weights	Ranking
Environment (C1)	0.493	C11	0.196	0.096	3
		C12	0.196	0.096	5
		C13	0.084	0.041	11
		C14	0.304	0.150	1
		C15	0.132	0.065	7
		C16	0.089	0.044	10
Social (C2)	0.311	C21	0.121	0.038	12
		C22	0.114	0.035	13
		C23	0.108	0.034	14
		C24	0.310	0.096	4



		C25	0.347	0.108	2
		C31	0.400	0.078	6
Governance (C3)	0.196	C32	0.232	0.046	9
		C33	0.283	0.056	8
		C34	0.085	0.017	15

The consistency ratios of the assessments are  $CR_{main}=0.026$ ,  $CR_{C1}=0.074$ ,  $CR_{C2}=0.052$ , and  $CR_{C3}=0.087$ . At the end of the fuzzy AHP method, the most important criteria are found as C14 (i.e., waste management), the second most important criteria is found as C25 (i.e., product quality and safety), and the third one is found as C11 (i.e., greenhouse gas emissions).

**Step 5. Assessments of experts for ranking the alternatives**

Experts assessed the alternatives by using the linguistic scale given in Table 2. Table 5 displays the evaluation of the first expert for the alternatives.

Table 5. The evaluation of the experts for the alternatives

	A1	A2	A3	A4	A5	A6
C11	VLE	HE	VLE	NE	NE	LE
C12	HE	EE	ME	NE	NE	HE
C13	NE	VHE	HE	NE	VLE	ME
C14	ME	ME	ME	NE	NE	NE
C15	NE	ME	ME	VLE	VLE	HE
C16	LE	ME	LE	VLE	VLE	HE
C21	LE	HE	EE	LE	LE	VLE
C22	ME	ME	EE	HE	VLE	NE
C23	ME	LE	LE	HE	HE	NE
C24	EE	ME	EE	VLE	LE	EE
C25	EE	VLE	ME	NE	HE	EE
C31	ME	ME	LE	NE	NE	VLE
C32	HE	VLE	VLE	NE	NE	VHE
C33	HE	VHE	ME	LE	HE	ME
C34	LE	VHE	HE	LE	NE	NE

**Step 6. Alternatives' ranking by applying the fuzzy impact matrix method**

Steps 1-5 of the fuzzy impact matrix method given in Section 2.3. are applied to rank the alternatives according to environment, social, and governance criteria and by considering all criteria. Table 6 displays the result of the fuzzy impact matrix method.

Table 6. The result of the fuzzy impact matrix method

	Environment (C1)		Social (C2)		Governance (C3)		General	
	BNP	Ranking	BNP	Ranking	BNP	Ranking	BNP	Ranking
Fast and low latency internet (A1)	0.170	3	0.240	1	0.112	1	0.522	1
Remote work (A2)	0.109	4	0.075	5	0.024	5	0.208	4

Connectivity in rural areas (A3)	0.214	1	0.225	2	0.073	3	0.512	2
Wearable devices (A4)	0.018	6	0.075	5	0.024	5	0.117	6
Augmented/virtual reality game (A5)	0.025	5	0.145	4	0.037	4	0.207	5
Broadband television broadcasts (A6)	0.190	2	0.199	3	0.079	2	0.467	3

According to the result of the fuzzy impact matrix method, A1 (i.e., fast and low latency internet) is found to be the most appropriate 5G solution in general ranking, social aspect ranking, and governance aspect ranking. A3 (i.e., connectivity in rural areas) is determined as the second appropriate 5G solution in general ranking and social aspect ranking. A6 (i.e., broadband television broadcast) is found as the third-ranked 5G solution in general ranking and social aspect ranking. Besides, A6 is ranked as the second alternative in the environment and governance criteria rankings. In environmental aspects, the most appropriate 5G solution is determined as A3 (i.e., connectivity in rural areas).

#### 4. CONCLUSION

5G connection will not only accelerate the use of communication technologies in our daily lives but will have transformative and accelerating effects on the infrastructure of all sectors. The opportunities offered by 5G technologies will transform many sectors, from automotive to retail, transportation to ICT. In addition, by providing this infrastructure, the competitiveness in global markets will be maintained, and new business volumes will be created [1].

This study proposes an integrated fuzzy AHP-fuzzy impact matrix framework for a 5G solutions assessment problem. The fifteen criteria and six alternatives were constructed by investigating the related literature and counselling the experts. A case study was presented to illustrate the potential of the proposed framework. At the end of the case study, fast and low latency internet is found to be the most effective 5G solution. At the same time, connectivity in rural areas is ranked as the second alternative, and broadband television broadcast is ranked as the third alternative.

In future investigation, it is likely to develop this study by implementing fuzzy sets extensions (e.g., hesitant fuzzy sets, intuitionistic fuzzy sets, Pythagorean fuzzy sets). Moreover, the 5G solutions assessment problem can be solved using other fuzzy MCDM methods (e.g., TOPSIS, VIKOR, MOORA).

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#### References

- [1] Deloitte, "5G teknolojisinin Türkiye için ekonomik ve sosyal faydalar," 2022.
- [2] Accenture, "The Impact of 5G on the European Economy," no. February, p. 89, 2021.
- [3] World Economic Forum, "The Impact of 5G: Creating New Value across Industries and Society," *World Econ. Forum*, no. January, p. 24, 2020.
- [4] X. Xu, Y. Chen, X. Zhang, Q. Liu, X. Liu, and L. Qi, "A blockchain-based computation offloading method for edge computing in 5G networks," *Software - Practice and Experience*, 51(10), 2015–2032, 2021.
- [5] X. Peng, X. Zhang, and Z. Luo, "Pythagorean fuzzy MCDM method based on CoCoSo and CRITIC with score function for 5G industry evaluation," *Artificial Intelligence Review*, 53(5), 3813–3847, 2020.
- [6] B. Bakmaz, Z. Bojkovic, and M. Bakmaz, "TOPSIS-based approach for network slice selection in 5G mobile systems," *International Journal of Communication Systems*, 33(11), 1–14, 2020.
- [7] M. Liang *et al.*, "Evaluating the Comprehensive Performance of 5G Base Station: A Hybrid MCDM Model Based on Bayesian Best-Worst Method and DQ-GRA Technique," *Mathematical Problems in Engineering*, 2022.
- [8] Intel, "How 5G will transform the business of media & entertainment.," 2018.
- [9] O. Kulak and C. Kahraman, "Fuzzy multi-attribute selection among transportation companies using axiomatic design and analytic hierarchy process," *Information Sciences*, 170(2–4), 191–210, 2005.
- [10] H.-Y. Wu, G.-H. Tzeng, and Y.-H. Chen, "A fuzzy MCDM approach for evaluating banking performance based on Balanced Scorecard," *Expert Systems with Applications*, 36(6), 10135–10147, 2009.

- [11] A. R. Lee, *Application of modified fuzzy AHP method to analyze bolting sequence of structural joints*. Lehigh University, 1995.
- [12] G. Büyüközkan and G. Çifçi, "A combined fuzzy AHP and fuzzy TOPSIS based strategic analysis of electronic service quality in healthcare industry," *Expert Systems with Applications*, 39(3), 2341–2354, 2012.
- [13] T. Y. Hsieh, S. T. Lu, and G. H. Tzeng, "Fuzzy MCDM approach for planning and design tenders selection in public office buildings," *International Journal of Project Management*, 22(7), 573–584, 2004.
- [14] I. Beg and T. Rashid, "TOPSIS for hesitant fuzzy linguistic term sets," *International Journal of Intelligent Systems*, 28(12), 1162–1171, 2013.

# Community Participation and the Sufficiency Economy for Sustainable Tourism Resource Development in "Karen" Community, Chiang Mai, Thailand

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## Abstract

This study explores community tourism participation and stakeholder engagement in Maesapok village, a Karen community in Chiang Mai province, Thailand. The research seeks to balance indigenous values with burgeoning tourism demands. This research paper studies how the Karen community in Maesapok village, develops tourism resources in the context of in the context of the sufficiency economy principle (SEP) and promotes community tourism participation. The study aims to identify challenges, such as lack of knowledge on blending tradition with innovation and access to resources and assess the impact of community-based tourism on the local economy and environment. The intrinsic relationship between community participation, the SEP, and sustainable development is evident in the transformation of Maesapok village's community resources into tourism products. Applying SEP, the culmination of these efforts is transformation its indigenous resources into tourism products that not only highlight the village's unique offerings but also champion sustainable practices benefiting both the community and the environment. Challenges such as balancing tourism demand with preservation and equitable distribution of tourism revenues persist. However, with the foundation of sufficiency economy and a commitment to sustainable development, Maesapok village poised to navigate these challenges, ensuring a holistic, inclusive, and sustainable growth trajectory for future generations.

**Keywords:** Tourism resource development, Sufficiency economy principle (SEP), Karen community, Community participation, Sustainable development

## 1. INTRODUCTION

Tourism is a vital part of Thailand's economic infrastructure, generating revenue and bridging cultural divides. It significantly impacts the Karen hilltribe community, providing economic opportunities and fostering cultural exchange. The Karen community benefits economically from tourists' visits to their natural beauty and vibrant culture, improving their standard of living and promoting cultural understanding. This positive impact is evident as the world becomes increasingly globalised.

Recognising this potential, the Thai government has made significant strides in harnessing the power of tourism. The National Tourism Development Plan (2018–2021) reflects this vision (The Ministry of Tourism and Sports, 2017). Aimed at enhancing the quality of tourism experiences and ensuring their sustainability, the plan underscores the nation's commitment to both its citizens and international visitors (Pratomlek, 2020). Nonetheless, the government's vision goes beyond mere policy. This contributes to tangible support for local communities, inspiring them to curate and provide authentic experiences. The project, referred to as "OTOP in a No-Life Tourism-Based Community," stands as a testament to this endeavour. With its goal of integrating modern innovations with the traditional essence of communities, the project represents a bridge between the old and the new (Pratomlek, 2020). The generous budget allocation in 2018 further solidified the government's intent to promote community-based tourism.

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However, the path to realising this vision is not devoid of hurdles. While resources and policies are in place, their effective implementation often faces challenges. Many communities face challenges blending tradition with innovation and adopting sustainable practices due to a lack of comprehensive knowledge (Kaendera and Leigh, 2021). The "Karen" community of Maesapok village in Chiang Mai province is one such example. Their journey offers valuable lessons about community participation and tourism resource development in ethnic tourism of Thailand. This research paper explores how the Karen community in Maesapok village, Thailand, develops tourism resources in the context of the sufficiency economy and promotes community tourism participation. The study aims to identify challenges, such as lack of knowledge on blending tradition with innovation and access to resources and assess the impact of community-based tourism on the local economy and environment. The findings will contribute to the development of sustainable tourism practices benefiting local communities and tourists.

## 2. THEORY

### 2.1 Background and Principles of the Sufficiency Economy for Sustainable Development

The Sufficiency Economy is not merely an economic model, but a philosophy deeply interwoven with the fabric of Thai society, culture, and values. Rooted in the wisdom imparted by His Majesty the King Bhumibol Adulyadej, this philosophy promotes a balanced approach to life and development. Key quotations from His Majesty, such as "If we are happy with however little we have, we will be less greedy and will exploit others less..." and "Sufficiency Economy is the foundation of life, the stability of the nation," encapsulate the core tenets of this philosophy: moderation, reasonableness, and resilience (H.M. The King's Speech, taken from Chaipattana Journal, August 1999 Issue). These principles emphasize the importance of avoiding excessive consumption and focusing on the well-being of the community as a whole. The Sufficiency Economy philosophy encourages individuals and the nation to strive for self-reliance and to prioritize sustainable development. By embracing moderation, reasonableness, and resilience (UNDP, 2007), Thailand can achieve a prosperous and harmonious society that benefits all its citizens. The principles (Kantabutra, 2006; Kittiprapas, 2015; UNDP, 2007; NESDB, 2007; Piboolsravut, 2004; Pruetipibultham, 2010; Somyana, 2012; Senanarong, 2004; Choochat, 2010, Arpanantikul et al., 2013; Issarangkun & Pootrakool, 2002; Buranapin & Rattawatankul, 2015) include the following:

- *Moderation* is a balance between necessity and excess, aiming to consume just enough for the right purpose, reducing resource use and environmental contamination.
- *Reasonableness* involves rational decision-making considering factors, outcomes, and stakeholder consideration. It includes knowledge, experience, analytical capability, and empathy. It also considers long-term benefits and stakeholder consideration.
- *Self-immunity* is a built-in resilience, adaptability, and ability to handle unpredictable events and internal and external environments, ensuring protection from negative external impacts.
- *Knowledge*, like wisdom, involves accumulating information, understanding its meaning, and applying it wisely. The sufficiency economy emphasizes thorough planning, careful application, and collaboration.
- *Morality* encompasses virtue, ethical behavior, honesty, tolerance, perseverance, and hard work, promoting good citizenship, cooperation, and reasonable behavior in society.

While the SEP originated in the 1970s, its relevance became particularly pronounced during the financial crisis of 1997 (Phuphaibul, Apanatikul, & Khuwawatsamrit, 2013). Thailand, like many other nations, faced significant economic challenges, but the principles of the Sufficiency Economy provided a roadmap to navigate these turbulent times. Rather than seeking rapid economic recovery at any cost, the emphasis was on balanced and sustainable growth (Senanarong, 2004). This approach was pivotal in shaping Thailand's response to the crisis and laid the foundation for the integration of the Sufficiency Economy principles in subsequent national development plans, notably the Ninth (2002–2006) and Tenth (2007–2011) National Economic and Social Development Plans. The SEP is essentially a roadmap for sustainable development, guaranteeing that progress is not made at the price of the environment or human well-being. By balancing human demands and resources, it ensures equitable and sustainable growth.

Thailand's embrace of the SEP transcends mere rhetoric; its principles are manifested across various sectors and facets of the nation's development framework. This tangible integration reflects His Majesty the King Bhumibol Adulyadej's vision, which, while rooted in Thai traditions (Kittiprapas, 2015), offers universal insights for sustainable development in the face of rapid economic progress and globalisation transitions (Hanpongpanth, 2002). His Majesty's emphasis on the Sufficiency Economy, especially in the aftermath of the 1997 financial crisis, was not just a theoretical proposition. It became an actionable guideline for various sectors, from agriculture and business to

government initiatives. For instance, in agriculture, the philosophy encouraged sustainable farming practices, focusing on self-reliance, and reducing dependencies on external inputs, thereby safeguarding against market volatility. In the business sector, the Sufficiency Economy principles advocated for corporate social responsibility, emphasising ethical business practices that benefit both shareholders and society at large, particularly in small and medium businesses (Phuphaibul, Apanatikul, & Khuwawatsamrit, 2013).

## *2.2 Sufficiency Economy and Sustainable Tourism Development*

SEP principles empower communities, build strong social structures, and strengthen the local economy. Thailand's tourism industry is adopting the Sufficiency Economy principles to address challenges like over tourism, environmental degradation, and cultural dilution. This holistic approach aligns with the UN's Sustainable Development Goals, focusing on local community well-being and resource preservation, benefiting both the economy and environment. Through responsible tourism practices, such as promoting community-based tourism and limiting the number of tourists in sensitive areas, Thailand strives to maintain its cultural authenticity and protect its natural landscapes for future generations.

In this regard, Thailand's approach aligns with the United Nations' Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth) and Goal 12 (Responsible Consumption and Production). By prioritising the well-being of local communities and ensuring sustainable use of natural resources, Thailand contributes to global efforts to achieve these goals. Additionally, Thailand's adoption of SEP further strengthens its commitment to sustainable development by promoting self-sufficiency, moderation, and resilience in all aspects of life. This encourages a balanced approach to economic growth that takes into account social and environmental factors. By incorporating both the SDGs and the SEP, Thailand sets an example for other countries in pursuing sustainable development while preserving cultural heritage and safeguarding.

Thailand's adoption of the SEP in tourism development, especially in community development. Community-based economic policies are crucial for empowerment and resilience in the face of globalization. is evident in initiatives such as the "OTOP in No-Life Tourism-Based Community" project. This project aims to integrate modern innovations with the traditional essence of communities, fostering a balance between tradition and innovation. Additionally, the government's commitment to sustainability is reflected in policies that promote corporate social responsibility in the tourism sector, encouraging ethical business practices that benefit both shareholders and society at large (Kontogeorgopoulos et al., 2013; Venturelli, 2020; Vikash, 2019). In 2007, Thailand's Ministry of Tourism and Sports and Tourism Authority of Thailand (TAT) initiated the New Thailand Tourism Awards for "The Most Outstanding Community-Based Tourism," focusing on community living, saving money, using folk wisdom and technology for tourist attractions, immunity from tourism effects, community participation, and environmental preservation. Community tourism management can take various forms under the sufficiency economy paradigm, such as homestay tourism, agrotourism, and integrated farming.

Thailand has made efforts to enhance the quality of services offered to tourists, such as enhancing technological capabilities and e-commerce apps. The country has also worked with local farmers and business owners to enhance their online literacy and digital skills. These examples demonstrate how the principles of moderation, reasonableness, and self-immunity are embedded in Thailand's approach to sustainable tourism development. In order to prioritize authentic experiences without damaging the environment or cultural heritage, Thailand's sustainable tourism strategy places an emphasis on balance. Additionally, to generating immediate economic benefits, it also has long-term advantages for the local economy, ecosystems, and social fabric.

## *2.3 Community Participation and Stakeholders in Tourism Development*

Tourism is a dynamic industry with societal, economic, and environmental dimensions. Concepts like community participation, Sustainable economic partnership, and sustainable development goals shape its development. Understanding these theories helps navigate complexities and ensures sustainable growth (Sin & Minca, 2014). According to Vanagas and Jagminas (2011), the overarching objectives of community-based tourism development are multifaceted. They span from tangible benefits like revenue generation and employment opportunities to more intangible outcomes such as cultural preservation and environmental conservation. However, it's pivotal to understand that the path from community tourism to sustainable tourism isn't always linear. As such, exploring alternative strategies to maximise community potential becomes crucial.

Community-based tourism, which promotes local experiences and ensures direct economic benefits for communities, aligns perfectly with the Sufficiency Economy's emphasis on self-reliance and community resilience. By fostering local ownership and participation in tourism initiatives, Thailand ensures that the benefits of tourism are

widespread and not just confined to popular tourist hubs. Thailand's tourism strategy involves a multi-stakeholder model, including local governments, NGOs, private sector operators, and academic institutions. This amalgamation of diverse perspectives ensures a balanced and comprehensive approach to tourism development. For instance, in promoting community-based tourism, stakeholders come together to ensure the initiatives are economically viable, environmentally sustainable, and culturally respectful. Such collaborative approaches, deeply anchored in the Sufficiency Economy principles, ensure that tourism in Thailand is a force for positive, sustainable, and inclusive growth (Phuphaibul, Apanatikul, & Khuwawatsamrit, 2013).

Moreover, a community has to participate and to develop their own tourist attractions better due to modernization, while at the same time keeping their traditional way of life in modern times (Naipinit & Maneenetr, 2010). The participation of the community in tourism development is connected its access to knowledge, and its related ability to control and manage local tourism resources (Cole, 2006). A community should cooperate by sharing their efforts and exchanging their ideas, knowledge, skills and experiences. In addition, community leaders should encourage the development and adoption of new practices, knowledge, or technology for enhancing common benefits (Sufficiency Economy Movement Sub-committee, 2007). SEP could be the criteria for development, in particular at the community. The approach is fundamental to empowerment and to building resilience through creating immunity to enable communities to face negative impacts of globalization.

Community participation represents more than just involvement; it signifies empowerment and agency. Central to effective tourism development, community participation ensures that the very people affected by developmental strategies are the ones crafting and implementing them. As Murphy (2004) detailed, for a community tourism planning process to be effective, it requires profound organisation, unwavering commitment, and the efficient utilisation of available resources. One counterargument to the importance of community participation in tourism development is that it may lead to inefficiency and lack of expertise, as the community members may not have the necessary skills or knowledge to effectively plan and implement tourism strategies.

#### *2.4 The Sufficiency Economy as Strategic Approaches to Community Tourism Development*

A forward-thinking approach to tourism development is essential. The UN's (2001) proposal emphasises the significance of having a long-term perspective that is visionary as well as actionable short- and medium-term plans. These strategies should be comprehensive, encompassing vision formulation, rigorous assessments, strategic implementations, and continuous evaluations. The integration of the Sufficiency Economy principles into Thailand's tourism strategies showcases a commitment to sustainable growth, ensuring that the nation remains a preferred destination for travellers while preserving its natural and cultural treasures for generations to come.

Public meetings, the dissemination of extensive background material, and constructive dialogue form the backbone of participatory mechanisms. Identifying stakeholders and ensuring they have meaningful avenues to contribute is paramount. The narrative isn't about passive involvement but active decision-making. Local residents, as emphasised by Wang et al. (2010), should view tourism planning as not just an external initiative but as their shared responsibility, fostering a sense of ownership and ensuring the practicality of tourism strategies. In this regard, the true essence of sustainable tourism lies in the heart of community involvement. Thailand's emphasis on community participation is not merely an implementation strategy but a reflection of the deep-rooted principles of the SEP.

While the SEP focuses on human resource development as the centre of sustainable development, my research process correspond with these concepts in community participatory development, which is at the heart of effective sustainable tourism development. For example, a community development approach based on SEP refers to the need for public hearings. In developing the prototype of public hearings, it is necessary to ask the villagers whether they need the intervention that is designed through listening to the people before solving their problems (Ministry of Foreign Affairs, 2017). Panthesen (1999) also emphasized that in SEP practice, to build a strong workforce for sustainable profits, human resource development professionals must ensure that the developmental steps are developed and inspired from within, and are not imposed from outside.

Community participation ensures that tourism strategies are not unilateral. Instead, they are shaped, refined, and implemented with input from those who are at the heart of the tourism experience—the local communities. Such an approach ensures that tourism initiatives are tailored, culturally sensitive, and environmentally conscious. It fosters a sense of ownership among local communities, ensuring that they are active stakeholders in both the benefits and responsibilities that come with tourism.

#### *2.5 Ethnic Tourism Resource Development*

Tourism product development means bringing new and innovative products, experiences, and services to the market for tourists to buy which can take many forms. Making more products available to tourists will increase the

length of time, increase the amount of money they spend, and encourage new and repeat visitors. In addition, consideration of Price, Product quality, Service, Staff quality, Product features and Flexibility can also help position the tourism product and business because it will be very important for them to stand out from the competitors (New west territory government, 2022).

In the development of cultural resources into tourism products, it is necessary to consider many aspects. Studies on ethnic tourism have shed light on its impacts, tourism planning, authenticity, ethnic community empowerment and sustainable development among other topics (Wang, et al., 2020). The economic interests of the dominant society may develop 'authentic' tourism products and market the 'exotic' image of indigenous peoples being motivated more by profit rather than by any genuine concern about presenting those peoples in a sensitive and just manner (Matteucci et al., 2022). The lack of authenticity in performance generates several issues. For example, there is the power structures, in that there is a failure to authorize (Cave, 2003). A lack of authorization can only occur with an implicit or passive view about the authenticity of the cultural product on the part of other actors such as tourists or government. Traditional ethnic festivals, pilgrimages, and historical events have been utilized to create an image of authentic ethnic traditions (Oakes, 1998; Sofield & Li, 2007).

Community tourism in the ethnic areas also has various types of issues and challenges. In Thailand, multiple initiatives were instituted at the community level with local government facilitation and support, whereby community members were invited to take part, but the results of such empowerment efforts tended to emphasize short-term returns in relation to certain political agendas and only a few influential clans participated in community development. (Intarucomporn, 2003, as cited in Nuttavuthisit et al., 2014). All local stakeholders should participate in tourism planning which needs to be developed at the beginning of pro-poor development plans from the grassroots to global levels (Theerapapissit, 2009).

Ethnic tourism, a niche yet impactful segment of the broader tourism industry, focuses on the rich tapestry of cultures, traditions, and histories of indigenous and ethnic groups. Thailand, with its diverse ethnic communities, offers a unique proposition for ethnic tourism. The "Karen" community in Maesapok village, Chiang Mai province, stands as a testament to the rich cultural heritage and traditions that Thailand boasts.

Thailand combines sufficiency economy principles with ethnic tourism development to create an authentic, sustainable, and mutually beneficial experience for tourists and local communities. These initiatives by Thailand exemplify its dedication to preserving cultural heritage and fostering sustainable economic growth (Phuphaibul, Apanatikul, & Khuwawatsamrit, 2013). Ensuring that tourism development is both ethical and sustainable is not just a responsibility but a necessity. From the principles laid out by Mason (2003) and Telfer (2008) to the recommendations of Vanagas and Jagminas (2011), the consensus is clear: for tourism to be beneficial, it must be rooted in ethical practices, sustainable strategies, and genuine community participation.

Promoting ethnic tourism aligns seamlessly with the SEP's tenets. By emphasising local traditions, customs, and ways of life, ethnic tourism ensures that tourists get an authentic experience, fostering mutual respect, understanding, and appreciation. Moreover, by promoting ethnic tourism, Thailand ensures that the economic benefits of tourism directly reach these communities, fostering sustainable economic development and reducing socio-economic disparities (Phuphaibul, Apanatikul, & Khuwawatsamrit, 2013).

### **3. RESEARCH AND METHODOLOGY**

The research uses a mixed-methods approach to study tourism development in the Karen Community. Data was collected through surveys, interviews, and observation between 2019 and 2023. Qualitative data was collected through participatory action research (PAR) and questionnaires. The study aims to understand the economic and social impacts of tourism on the community. The findings will be analyzed using thematic analysis and statistical techniques. The research may not be representative of all indigenous communities in Thailand.

#### *3.1 Research Site*

Chiang Mai province is characterised by its rich cultural diversity, encompassing 19 distinct ethnic groups. Each group possesses a distinct and captivating identity, presenting a robust potential for development into intriguing cultural tourism destinations. From the studies about ethnic tourism in Chiang Mai it has been demonstrated that the villagers' level of participation has been inadequate because many residents possess low levels of education, so they may be more likely to engage in low-level tourism jobs; thus, they will earn less profit in tourism compared with other industries.

The research was undertaken with community involvement, particularly focusing on the Karen community in Maesapok village, Chiang Mai province. Maesapok village is in the Maewin sub-district of the Maewang district in



northern Thailand. The village spans an area of 29.725 sq. km. and has been home to the Karen community for over half a millennium. It is nestled within the highlands of the Obkhan National Park, boasting lush landscapes, verdant forests, picturesque waterfalls, and serene streams.

Considering the natural and cultural resources, the Maesapok village's Karen community has the potential to transform their ethnic resources into a tourism offering. This offering can be grounded in the SEP framework, providing an authentic experience of their culture. The tourism potential in Maesapok not only serves as a source of pride for the Karen community but also to share their rich heritage. To ensure sustainable development, the Karen tourism offering should adhere to the "VRIN" criteria of Amoako et al. (2021), ensuring it is valuable, rare, inimitable, non-substitutable, and easily accessible. To sustain ethnic tourism, it is crucial to promote domestic tourism initiatives amidst the challenges of COVID-19.

### 3.2 Sample Demographics and Study Stakeholders

Understanding stakeholder engagement is pivotal when considering population dynamics. Collaborative efforts across diverse sectors can significantly influence organisational outcomes. As posited by Freeman (1984, p. 84), stakeholder strategy is underpinned by stakeholder theory. This theory advocates for organisational collaboration with a myriad of stakeholder groups, recognising their potential impact on organisational capacity.

Various classifications have been employed to categorise stakeholders, ranging from business sectors to individual consumers. It is imperative for businesses to discern between different stakeholder types, especially when gauging their influence on the tourism industry. Previous research has segmented key stakeholders in the tourism sector into employees, government, community/society, and independent business owners (Amoako et al., 2021). In the context of the Thai tourism sector, stakeholders can be categorised into the government sector, private sector, non-profit organisations, local inhabitants, and tourists (Soonsan, 2017).

This study involves local government bodies, educational institutions, private occupational groups, Karen members, and community leaders. The sample includes tourism stakeholders and volunteer tourists with community development experience as follows.

Table 1. Participants - Research Activities

Participants	Number (people)	Research Activities	Period
<ol style="list-style-type: none"> <li>1. Community leaders of Maesapok</li> <li>2. Local tourism entrepreneurs and workers</li> <li>3. The local government officers (officers from MSAO and the village headman)</li> <li>4. The representatives of the Karen and the representatives of local occupation groups</li> </ol>	<p>3</p> <p>6</p> <p>3</p> <p>12</p>	Meeting and Focus group discussion (The appropriate sufficiency economy principles and practices for the tourism resource development of the Karen community in Maesapok village)	30 May 2020
<ol style="list-style-type: none"> <li>1. Community leaders of Maesapok</li> <li>2. The local government officers (officers from MSAO)</li> <li>3. The representatives of the Karen</li> </ol>	<p>3</p> <p>2</p> <p>14</p>	Meeting and Planning for human resource development ( <b>Pilot Project A</b> : Tourism workshop training for human resource development)	17-18 Aug 2020
The participants in the pilot project A: Karen people and local people in Maewin sub-district who are willing to participate in the project	50	<ul style="list-style-type: none"> <li>- The Implementation of Project A (Tourism workshop training)</li> <li>- The survey of the satisfaction and opinion on tourism workshop training (Questionnaires)</li> </ul>	19 -21 Aug 2020

<p>The participants in the project B:</p> <ol style="list-style-type: none"> <li>1. The president of Hub Maewin Club</li> <li>2. Members of Karen Weaving Textile group</li> <li>3. Members of Maesapok Farming group</li> <li>4. Members of Trekking Tour group</li> <li>5. The local government officer (officers from MSAO and the village headman)</li> </ol>	<p>1</p> <p>8</p> <p>10</p> <p>13</p> <p>3</p>	<p>Meeting and Planning for tourism resource development (<b>Pilot Project B</b>)</p>	<p>9 Jan 2021</p>
<ol style="list-style-type: none"> <li>1. Leaders and Members of Karen Weaving Textile group (Karen women)</li> <li>2. The president and the representative of Hub Maewin Club member</li> </ol>	<p>26</p> <p>2</p>	<p>The Implementation of the Pilot Project B for tourism resource development by Karen Weaving Textile group</p>	<p>2021 – 2022</p>
<ol style="list-style-type: none"> <li>1. Leaders and Members of Karen Weaving Textile group (Karen women)</li> <li>2. The representatives of Hub Maewin Club</li> <li>3. The local government officers (officers from MSAO)</li> </ol>	<p>14</p> <p>3</p> <p>2</p>	<p>The assessment of the project (Meeting and focus group discussion)</p>	<p>24 Mar 2022</p>
<ol style="list-style-type: none"> <li>1. The experts from the public and private sectors</li> <li>2. Volunteer tourists (Students from Chiang Mai Rajabhat University and general people)</li> </ol>	<p>5</p> <p>18</p>	<p>The assessment of the project (The survey on experts' and volunteering tourists' opinions by questionnaires and group interview)</p>	<p>29 Mar 2022</p>
<ol style="list-style-type: none"> <li>1. Members of Farming group</li> <li>2. The president and the member of Hub Maewin Club</li> </ol>	<p>10</p> <p>2</p>	<p>The Implementation of the Pilot Project B for tourism resource development by Farming group</p>	<p>2021 – 2022</p>
<ol style="list-style-type: none"> <li>1. Members of Farming group</li> <li>2. The president and the member of Hub Maewin Club</li> <li>3. The experts from the public and private sectors</li> </ol>	<p>10</p> <p>2</p> <p>5</p>	<p>The assessment of the project (Observation of the group's implementation and focus group discussion)</p>	<p>30 Jun 2022</p>

4. The local government officers (officers from MSAO)	1		
1. Leaders and Members of Trekking Tour group	13	The Implementation of the Pilot Project B for the development of tourism resources by Trekking Tour group	2021 – 2022
2. The president and the representative of Hub Maewin Club member	2		
3. The local government officers (officers from MSAO)	2		
Volunteer tourists:		The assessment of the project (The survey of volunteering tourist satisfaction by questionnaires and group interview)	23 Jul 2022
1. Experts from the public sectors	3		
2. Students from Chiang Mai Rajabhat University	10		
3. Representatives from other sectors of the community	5		
1. The leaders of Karen Weaving Textile group	3	- Meeting and Focus group discussion (Conclusion of the pilot project)	14-15 Oct 2022
2. The leaders of Farming group	2	- Meeting and Focus group discussion (The strategy for tourism resource development)	
3. The leaders of Trekking Tour group			
4. The president and the member of Hub Maewin Club	2		
5. The local government officer (officers from MSAO and the village headman)	2		
	1		

### 3.3 Theoretical Framework

This research's framework is rooted in a comprehensive theoretical exploration, aiming to devise a strategy for tourism resource development through community participation within the sufficiency economy context, specifically in the Karen community of Maesapok village, Chiang Mai, Thailand.

#### 3.3.1 Tourism Resource Development

This research explores the relationship between Sufficiency Economy Philosophy (SEP) and sustainable development objectives in Thai tourism. It highlights the potential of SEP principles in guiding the Karen community towards sustainable tourism resource management. The Global Sustainable Tourism Council's 2020 Destination Criteria serve as a benchmark for sustainable tourism, focusing on sustainable management, socio-economic sustainability, cultural sustainability, and environmental sustainability. By adhering to SEP principles, tourism development can achieve Sustainable Development Goals, fostering economic ties, mitigating impacts, and enhancing socio-cultural health.

Nevertheless, ethnic tourism is not devoid of obstacles. According to Intaruccomporn (2003), as mentioned in Nuttavuthisit et al. (2014), community-driven projects in Thailand frequently result in immediate advantages that are

affected by political motivations, ultimately benefiting only a limited number of individuals. Studies indicate that in places like Chiang Mai, local participation is limited due to educational constraints, leading to lower tourism profits. The Karen community in Maesapok faces similar challenges, underscoring the need for tourism education and skill enhancement. Thus, fostering collaboration and instilling a sense of responsibility is essential for community tourism's success.

SEP advocates for community involvement in tourism through the establishment of dedicated working groups. Networking within the SEP framework fosters a protective environment (Ubonsri & Pannun, 2013). Indaratna (2013) posits that SEP challenges conventional business norms, urging a shift towards moderation and ethical practices to safeguard natural and cultural assets. An integrated tourism approach is the most effective route to sustainability (Greg & Derek, 2003). The principles of the sufficiency economy offer an alternative pathway to sustainable development without compromising environmental and cultural integrity. This research posits that SEP can guide a pilot project for community tourism in Maesapok village.

### 3.3.2 Community Tourism Development Paradigms

Thailand's community development trajectory has evolved over time, transitioning from a centralised approach to a more grassroots, self-sustaining model. Historically, the belief was that given the right opportunities, individuals would actively participate in community upliftment (Somsup, 1996, cited in Nuttavuthisit et al., 2014). However, Thailand's societal structure and cultural norms have sometimes impeded genuine local engagement, leading to unsuccessful participatory projects (Nuttavuthisit, Jindahra, & Prasarnphanich, 2014). Often, initiatives that lack local context overlook community interests, resulting in limited collaboration (Wisartsakul, 2009, cited in Nuttavuthisit et al., 2014).

While SEP emphasises human-centric sustainable development, this research aligns with community participatory development, which is central to effective sustainable tourism. For instance, SEP-based community development necessitates public consultations. Engaging the community to understand their needs and perspectives is paramount (Ministry of Foreign Affairs, 2017). Panthesen (1999) stresses that for SEP to be effective, developmental initiatives should be community-driven rather than externally imposed.

The inaugural project should prioritise human resource development, facilitated by tourism workshops in the Karen community. Enhancing education and local engagement through stakeholder collaboration is pivotal for applying sufficiency economy principles to bolster community capabilities. SEP champions self-improvement through knowledge acquisition, aiming for gradual capacity enhancement and ethical well-being enhancement.

## 4. RESULTS

### 4.1 Stakeholder Engagement in Harnessing Community Potential

In the context of community development in Thailand, only a select few influential clans have actively participated. Concerns over unequal benefits between the more privileged and less privileged groups have frequently led to disputes and disagreements as a result of this limited involvement. The disparity between communities has only grown, with some thriving while others struggle due to mismanagement of power and resources. This scenario has often led to chaos and fragmentation. One of the key challenges that community tourism in Thailand faces is the absence of a concrete tourism development plan. There's also a noticeable weakness in tourism development-related organisations and a palpable lack of tourism management knowledge within the communities.

Maesapok village, located in the hill tribe area of Chiang Mai province in northern Thailand, stands as a testament to the potential of community tourism. Due to the demand for economic and social opportunities that can improve the quality of life for its minority residents, the village has been developing as a tourism hub. To understand the tourism potential of Maesapok village, a comprehensive approach was adopted. This involved site surveys, in-depth interviews, and focus group discussions facilitated through participatory action research (PAR) processes. During this research phase, both the participants from Maesapok and Maewin sub-districts and the researcher explored the village area extensively, interviewing key figures to gain deeper insights.

The findings from the survey culminated in creating a tourism route and a community asset map for Maesapok. This map, as represented in Figure 1, showcases the plethora of tourism resources that Maesapok boasts. From scenic waterfalls to the lush community forest, the Kok Nong Na learning centre, picturesque rice terraces, the Karen weaving textile group, and the Pa Mon traditional Karen houses, Maesapok village is a treasure trove of attractions. With such a diverse range of resources, Maesapok has the potential to transform these assets into a variety of tourism products and activities.

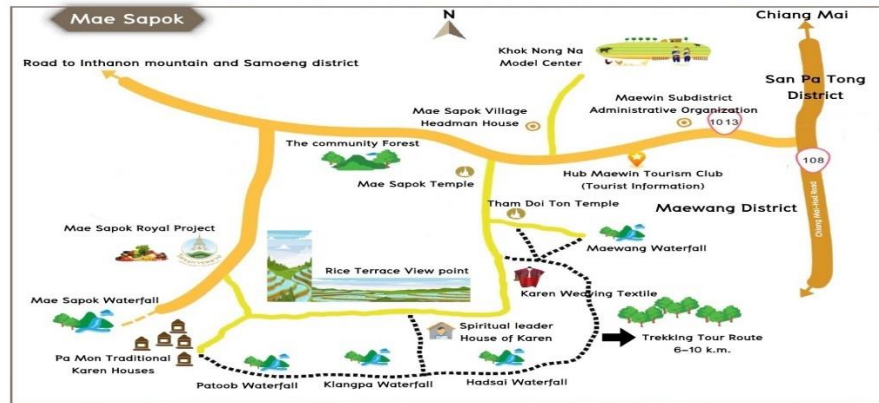


Figure 1: Masapok tourism route and community asset map

The journey of Maesapok Village towards becoming a tourism hotspot is a testament to the power of community participation. At the heart of this transformational journey was a collaborative spirit where residents, local leaders, and external stakeholders came together, embracing a shared vision for the village's future. The outcomes of this robust community participation manifested themselves in various ways. Groups were formed, each focusing on different facets of the village's tourism potential. These groups, through deliberations and brainstorming sessions, identified areas of strength to capitalise on and challenges to mitigate. Their collective insights and aspirations laid the foundation for the targeted initiatives discussed in the subsequent sections.

#### 4.2 Initiative: Eco-Tourism Development

The potential of Maesapok Village as an eco-tourism destination was a recurring theme in community discussions. The village, with a rich tapestry of natural landscapes, flora, and fauna, presented an ideal backdrop for eco-tourism. But realising this potential required more than nature; it demanded a harmonious blend of nature with sustainable practices, community involvement, and visitor education. The following section details the outcomes of an experimental trekking ecotourism programme in Maesapok village, rooted in Karen practices.

##### 4.2.1 The Role of Community in Eco-Tourism

The village community played a pivotal role in spearheading the eco-tourism initiative. Local environmental enthusiasts collaborated with the village's nature aficionados to devise eco-tourism concepts. They charted nature paths, pinpointed distinctive species for bird-watching excursions, and highlighted picturesque locations for observing sunrises and sunsets. Thanks to the community's profound understanding of the local landscape and ecosystems, these eco-tours were both genuine and eco-friendly. The community's efforts not only brought economic benefits to the village but also raised awareness about the importance of preserving the natural environment. Tourists were able to immerse themselves in the beauty of the region while learning about sustainable practices. This successful eco-tourism initiative became a model for other communities, inspiring them to follow in the village's footsteps and protect their own natural resources.

In terms of demographic distribution, females predominated with 16 participants. Analysing age, students aged 15–25 were the most represented, with 12 individuals. Other age cohorts included three individuals between 26 and 35 years old, five between 36 and 45 years old, and three aged 46 years or older. A quantitative analysis revealed that the experimental trekking ecotourism initiative garnered an exceptionally positive response from tourists, yielding an average satisfaction score of 4.31 (SD = 0.540). Amongst the various facets assessed, tourists rated the 'worthwhile tourism experience' (mean = 4.66, SD = 0.485) and the 'enhanced awareness of natural conservation due to the programme' (mean = 4.55, SD = 0.511) the highest (

Table).

From a qualitative perspective, tourists lauded the natural splendour of Maesapok Village and the rich Karen cultural legacy. They were especially captivated by the traditional tribal ways of life witnessed in certain village segments. Tourists' suggestions to enhance the programme varied from amplifying cultural education activities to incorporating more interactive and enjoyable tasks. The post-trip herbal foot bath was particularly well-received. Some also voiced the desire for a briefer trekking route to cater to novices and families.

Regarding future participation and suggestions, over 80% of participants were keen to endorse the programme to their peers. When probed about a potential price hike to 400 baht per individual for profit, half were amenable, 30% were ambivalent, and 20% were not in favour. Notably, the majority of those unsure or not interested were students. It was clear that the post-trip herbal foot bath was a hit among the participants. Many expressed their satisfaction with this relaxing activity after a long trek. Additionally, there was a strong demand for a shorter trekking route that would be suitable for beginners and families. This feedback highlighted the need to cater to a wider range of skill levels and preferences on future trips.

However, despite the slight hesitation of some participants, the overall feedback was overwhelmingly positive. Many expressed their satisfaction with the well-organised itinerary, knowledgeable guides, and stunning natural landscapes encountered during the trek. Additionally, numerous participants highlighted the importance of providing options for less experienced trekkers and families, suggesting the development of a shorter trekking route that would cater to their needs. This feedback was taken into consideration by the organisers, who acknowledged the potential for expanding the programme's reach by accommodating a wider range of participants.

#### *4.2.2 Collaboration with External Experts*

The community collaborated with external eco-tourism experts to improve its effectiveness. They provided insights into sustainable practices and organized workshops to educate community members about eco-tourism principles. This led to a deeper understanding of environmental impacts and a sense of responsibility towards sustainable practices. Despite challenges like COVID-19, the community quickly adapted by introducing interactive workshops, hands-on activities, and rain gear. These adjustments not only maintained the success of eco-tourism but also showcased the community's resilience and commitment to providing sustainable travel experiences.

#### *4.2.3 Educating the Visitors*

A cornerstone of the eco-tourism initiative was visitor education. The community recognised that for eco-tourism to be truly sustainable, visitors needed to be active participants in conservation efforts. Hence, eco-tours were designed to be immersive learning experiences. Tour guides, trained by the community and external experts, emphasised the importance of preserving Maesapok's natural beauty. Visitors were provided with educational information regarding indigenous plant and animal species, the intricate interdependence of ecosystems, and guidelines for responsible behaviour to mitigate environmental harm. They were encouraged to observe and appreciate the delicate balance of nature while also being made aware of the potential consequences of their actions. Eco-tourists were given opportunities to participate in hands-on activities such as tree planting, wildlife monitoring, and habitat restoration projects. These activities not only allowed visitors to contribute directly to conservation efforts but also fostered a sense of connection and responsibility towards the environment. By actively involving tourists in these initiatives, the community of Maesapok hoped to inspire a deeper understanding and appreciation for the natural world, ultimately leading to a more sustainable future for their beloved land.

#### *4.2.4 Monitoring and Feedback*

Understanding that eco-tourism is an evolving field, a system was set up for continuous monitoring and feedback. Community members regularly reviewed the tours, assessing their impact on the environment and gathering feedback from visitors. This iterative approach ensured that the eco-tourism initiative remained aligned with its core principles while adapting to changing circumstances and needs.

### *4.3 Initiative: Cultural Heritage Preservation and Promotion*

Maesapok Village, with its rich cultural tapestry, stands as a testament to generations of traditions, arts, and stories. In the quest to position the village as a sought-after cultural tourism destination, it was crucial to ensure that its cultural essence was both preserved and showcased in its most authentic form. The Maesapok Farming Group is showcasing Karen organic rice as a souvenir, demonstrating the positive impact of community-based tourism on socio-economic development.

#### *4.3.1 The Heartbeat of Maesapok: The Community's Involvement*

Integral to the cultural preservation initiative was the community's active involvement. Local artisans, performers, and elders became the torchbearers of this endeavour. Their intimate knowledge of local traditions, arts, and crafts

became the foundation upon which cultural experiences were crafted. From traditional dance performances to age-old craft techniques, every aspect was meticulously curated, ensuring that visitors experienced the authentic spirit of Maesapok.

#### 4.3.2 Workshops and Skill Development

Recognising the need for continuity and sustainability, the community organised workshops aimed at imparting traditional skills to the younger generation. These workshops served dual purposes: preserving age-old techniques and providing the youth with skills that could be economically beneficial. Collaborations with cultural experts further enriched these workshops, blending traditional wisdom with modern pedagogies.

#### Development of Karen Organic Rice as a Souvenir

- **Community Collaboration:** The initiative fostered collaboration and knowledge exchange among farmers in the village, which subsequently strengthened their intra-community relationships.
- **Economic Impact:** The community generated additional revenue by selling surplus agricultural produce beyond what was required for household consumption. The Maesapok Farming Group introduced a Karen organic rice product, which was priced between 60-70 baht per kilogram. The product's packaging was thoughtfully designed with a tribal signature label, telling the story of Karen rice farming.
- **Branding and Marketing:** The chosen brand name, "Ta'-au-sei," which means "sufficiency," encapsulated the self-sufficient lifestyle of Karen farmers in the Maesapok village. The slogan "nice rice, quality eating, sufficient with a satisfied meal" further complemented this.

#### 4.3.3 Cultural Festivals and Events

To amplify Maesapok's cultural allure, the community initiated periodic cultural festivals and events. These events, deeply rooted in tradition, became platforms where both residents and visitors could immerse themselves in the village's cultural milieu. Local groups showcased their talents, from dance performances to culinary skills, turning these events into vibrant cultural melanges. While cultural festivals and events can indeed enhance the cultural appeal of Maesapok, it is not necessary to have a specific slogan like "nice rice, quality eating, sufficient with a satisfied meal" to attract residents and visitors to these events. The rich and diverse cultural offerings of Maesapok speak for themselves, drawing in crowds eager to experience the unique traditions and flavours of the village. The festivals and events serve as a testament to the community's pride in their heritage and provide a platform for locals to share their talents and skills. From vibrant dance performances to mouthwatering food stalls, the festivals showcase the best of Maesapok's cultural heritage. Visitors can immerse themselves in the lively atmosphere, sampling traditional delicacies and witnessing age-old rituals. By attending these events, residents and tourists alike gain a deeper understanding and appreciation for the customs and values that make Maesapok so special.

#### 4.3.4 Feedback and Evolution

Just as with eco-tourism, the community recognised the importance of evolution in cultural initiatives. A system for gathering feedback from both residents and visitors was put in place. This feedback became instrumental in refining the cultural experiences, ensuring they remained authentic while catering to evolving tastes and preferences. While gathering feedback from residents and visitors is important for refining cultural experiences, it may also lead to a dilution of authenticity as catering to evolving tastes and preferences could potentially compromise the original customs and values that make Maesapok special. Striking a delicate balance between preserving tradition and adapting to changing demands becomes crucial to maintaining the authenticity of Maesapok. Adapting cultural experiences to evolving tastes and preferences should be done with caution, ensuring that the original customs and values are not compromised. Constant dialogue and collaboration with the community can help in incorporating new elements while safeguarding the essence that makes Maesapok unique.

#### **The system allowed for continuous improvement and innovation in the cultural experiences offered.**

The background narrative on the rice packaging serves to illustrate the difficulties previously experienced in rice cultivation due to inadequate water resources. Additionally, the Maesapok village boasts breathtaking natural beauty, particularly its lush forests, which have also absorbed modern influences. The preference of the younger generation for modern attire instead of traditional tribal clothing, their fondness for motorcycles, and the widespread use of mobile phones highlight the shifting dynamics within the community.

### **Tourist Feedback and Future Directions**

The tourists' feedback shed light on potential areas for improvement. Some suggestions were to provide a hands-on experience for tourists, improve the English proficiency of local guides, and introduce culture-centric activities. The feedback also highlighted the need for engaging the youth more actively in tourism activities, which could be vital for the long-term sustainability of these initiatives. To address these suggestions, the community decided to establish a cultural exchange programme where tourists could learn traditional crafts directly from local artisans, creating a more immersive and interactive experience. Additionally, they initiated English-language training programmes for local guides to enhance communication with foreign visitors. By involving the youth in tourism activities, such as organising cultural events and guiding tours, the community aimed to preserve their heritage while simultaneously fostering economic growth and creating a sense of pride and ownership among the younger generation. However, this approach may unintentionally lead to the commodification of traditional crafts and the exploitation of local artisans. As tourism grows and demand for traditional crafts increases, there is a risk of mass production and a loss of authenticity in these crafts, diluting their cultural significance. In order to address this potential issue, the community has implemented strict regulations and quality control measures to ensure that traditional crafts are produced with integrity and respect for their cultural heritage. They have also established fair trade practices and formed cooperatives to empower local artisans and ensure they receive fair compensation for their work. By striking a balance between tourism and cultural preservation, the community is working to ensure the longevity and authenticity of their traditional crafts for generations to come.

#### *4.4 Outcomes of the Maesapok Trekking Tour Development*

##### *4.4.1 Trekking Ecotourism Programme Design and Implementation*

The working group responsible for the Maesapok Trekking Tour designed a comprehensive one-day trekking ecotourism programme, focusing on Maesapok Village and its surroundings. The programme, detailed in Table 1, begins with an introduction to the village, followed by a series of activities highlighting the Karen lifestyle, community resources, and natural beauty of the area.

Maesapok village, with its picturesque rice terraces and green hills, has long been a popular trekking destination. The region boasts unique natural scenery, offering tourists an immersive experience of hill tribe areas. Since 1987, travel agencies have been offering tourism programmes in Mae Sapok Village, which later expanded to include trekking, elephant riding, and rafting in 1992.

However, the dominance of these agencies and investors led to monopolisation of the tourism industry, with local people often relegated to roles like porters, raft controllers, or elephant carers, earning minimal wages in the process. Despite these challenges, the village still preserved its tribal lifestyles, relying on agriculture, rice terraces, and livestock.

##### *4.4.2 Implementation Process*

Recognising the need to reclaim their heritage and provide a more authentic experience to tourists, the community came together under the guidance of Mrs. Intira Kittigriangkrai, the president of the Hub-Maewin tourism club. The focus was to develop tourism resources rooted in the sufficiency economy approach. As a result, three major working groups were formed: Karen Textile Weaving, Maesapok Farming, and Maesapok Trekking Tour. For the Maesapok Trekking Tour, the emphasis was on creating a trekking ecotourism programme that showcased both the beauty of nature and the richness of tribal culture. The trekking route, besides natural attractions, included the weaver community in Ban Mae Sapok Tai and the Karen community in Bam Pha Mon.

##### *4.4.3 Challenges and Opportunities*

The community faced challenges in balancing the influx of tourists with preserving their traditional way of life. One of trekking tourist guide, emphasised that the Maesapok trekking tour programme differed from typical adventure trekking. The community focused on shorter walks combined with conservation activities, like the reforestation programme, where tourists were encouraged to plant trees. Through such initiatives, the community aimed to promote their values, beliefs, and rituals that coexist harmoniously with nature.

Moreover, the community saw opportunities in shifting the narrative from being mere service providers to becoming storytellers, sharing their rich Karen heritage and practices with visitors. The Maesapok Trekking Tour Group, through its sufficiency economy approach, has managed to carve a niche for itself in the tourism sector. By



blending conservation efforts with the promotion of local culture, the group ensures that tourists leave with a deeper appreciation for both the environment and the unique heritage of the Karen community.

Table 2 Tourists' satisfaction on the trekking ecotourism program based on Karen practices in Maesapok

Topic	Level of Satisfaction		Interpretation
		S.D.	
1. Attractiveness of the program	3.94	0.639	Satisfied
2. Welcoming and services of tour staff	4.55	0.511	Very satisfied
3. Richness and beauty of nature	4.50	0.514	Very satisfied
4. Local lifestyle and tribal cultures	3.83	0.514	Satisfied
5. Knowledge acquired from the program	4.05	0.539	Satisfied
6. Safety during the program	4.38	0.607	Very satisfied
7. Awareness in natural conservation due to the program	4.55	0.511	Very satisfied
8. Worthwhile tourism experience	4.66	0.485	Very satisfied
Overall	4.31	0.540	Very satisfied

#### 4.5 Initiative: Infrastructure and Amenities Enhancement

As Maesapok Village positioned itself as a budding tourist destination, it became evident that infrastructural development was imperative. Not only would this ensure the comfort and safety of visitors, but it would also elevate the living standards of the local community. The process of infrastructural upgrading was not simply about creating roads or enhancing utilities; it was about crafting an experience that resonated with Maesapok's ethos.

##### 4.5.1 The community's vision for infrastructure

The foundation of all infrastructural projects was the community's vision. Through town hall meetings and discussion forums, residents shared their insights on what they envisioned for Maesapok. These discussions ensured that the infrastructural enhancements aligned with the village's character and the community's needs.

##### 4.5.2 Local Participation in Development

Beyond the planning phase, community members played an active role in the actual development process. Local artisans and workers were involved in construction projects, ensuring a blend of traditional techniques with modern practices. This not only ensured job opportunities for the locals but also added a touch of Maesapok's essence to every infrastructural element.

##### 4.5.3 Emphasis on Sustainable Practices

With a keen awareness of the need for sustainability, the community championed the use of eco-friendly materials and practices. Efforts were made to harness renewable energy sources, reduce waste, and promote water conservation in all infrastructural projects.

##### 4.5.4 Continuous Monitoring and Upgradation

Recognising that infrastructure is an evolving need, the community set up mechanisms for continuous monitoring and upgrading. Feedback from both residents and tourists was regularly gathered, leading to iterative improvements. This ensured that Maesapok's infrastructure not only met current requirements but was also future-ready.

## 5. CONCLUSION

The intrinsic relationship between community participation, the SEP, and sustainable development is evident in the transformation of Maesapok village's community resources into tourism products. Rooted in the belief in collective agency, community participation empowers local stakeholders to actively partake in and influence developmental processes. This participation, undergirded by sufficiency economy principles, advocates for a balanced and sustainable approach to development, ensuring that communities are self-reliant and resilient in the face of external challenges.

The sufficiency economy philosophy (SEP), a unique model proposed by His Majesty King Bhumibol Adulyadej of Thailand, emphasises moderation, reasonableness, and the need for built-in resilience against external shocks.

When applied to Maesapok village's tourism initiatives, SEP principles guided the community to transform their indigenous resources into sustainable tourism products without compromising their environmental and cultural integrity.

The culmination of these efforts, through active community participation, is the development of tourism products that not only showcase the village's unique offerings but also promote sustainable practices that benefit both the community and the environment. However, like any developmental endeavour, challenges arise. Balancing tourism demand with preservation, ensuring equitable distribution of tourism revenues, and managing external influences are ongoing concerns. Yet, with the foundation of SEP and a focus on sustainable development, Maesapok village is well-positioned to navigate these challenges, ensuring that their growth is holistic, inclusive, and sustainable for generations to come.

## 6. IMPLICATION

The research results could promote the approaches to strengthen social and human capital in Karen community, Maesapok village. The research projects would enhance locals' favorable attitudes, skill and ability in tourism product development and including the satisfaction in tourist experience by visitors' interactions with residents. Community tourism working at sufficiency economy-based delivering enjoyment, hospitality service, and educational experiences for visitors, while helping generate supplementary income for those local people. The strategy for tourism resource development under SEP in Maesapok could be as the alternative guideline for sustainable community tourism development.

Moreover, integrating education and cultural preservation into tourism plans fostering partnerships and collaborations among stakeholders studying tourist behavior patterns as developing leadership and governance skills within the community are key elements for sustainable tourism development. These recommendations aim to support tourism in Maesapok Village while addressing specific challenges identified while ensuring that ongoing development efforts align with the principles of Sufficiency Economy. Conducting research in these areas will provide insights, for policymakers, community leaders well as all stakeholders involved in Maesapok's tourism development. This research expects that Maesapok could be as the pilot community in the tourism resource potentiality development and the sample of successful ethnic tourism development for other areas.

## References

- [1] Amoako, G. K., Obuobisa-Darko, T., & Marfo, S. O. (2021). Stakeholder role in tourism sustainability: the case of Kwame Nkrumah Mausoleum and centre for art and culture in Ghana. *International Hospitality Review*.
- [2] Arpanantikul, M., Phuphaikul, R., & Khuwatsumrit, K. (2017). Sufficient health as perceived by Thai villagers: a qualitative study. *Nursing and Health Sciences*, 19, 191–197.
- [3] Bunyasrie, V. (2010). The Thai financial crisis and the sufficiency economy philosophy. *International Business & Economics Research Journal*, 9(8), 7-13.
- [4] Buranapin, S., & Rattawatankul, T. (2015). Philosophy of Sufficiency Economy and Business Sustainability: A Framework for Operational Implications. *Journal of Business Behavioral Sciences*, 27(1), 115-140.
- [5] Cave, J., Ryan, C., & Panakera, C. (2003). Residents' perceptions, migrant groups and culture as an attraction—the case of a proposed Pacific Island cultural centre in New Zealand. *Tourism Management*, 24(4), 371-385.
- [6] Choochat, (2010). *Tourism in sufficiency economy dimension*. Chiangmai, Thailand: Chiangmai Rajabhat University.
- [7] Cole, S. (2006). Information and empowerment: The keys to achieving sustainable tourism. *Journal of Sustainable Tourism*, 14, 629–644.
- [8] Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- [9] Greg, R., & Derek, R.H. (2003). 'Sustaining the community' in *Tourism and sustainable community development*. Great Britain: Routledge.
- [10] Hanpongpanth. (2002). *Rediscovering Buranagarn Buddhist public relations in Thai community development*.
- [11] Kantabutra, S. (2008). Development of the sufficiency economy philosophy in the Thai business sector: Evidence, future Research and policy implications. *Sufficiency Economy*, 26, 1-35.
- [12] Kaendera, S., & Leigh, L. (2021). Five Things to Know About Thailand's Economy and COVID-19. Retrieved from <https://www.imf.org/en/News/Articles/2021/06/21/na062121-5-things-to-know-about-thailands-economy-and-covid-19>
- [13] Kittiprapas, S. (2015). *Sustainable happiness and sustainable development*, Retrieved from [http://www.happysociety.org/uploads/HsoDownload/9499/download\\_file.pdf](http://www.happysociety.org/uploads/HsoDownload/9499/download_file.pdf)
- [14] Kontogeorgopoulos, N., Churyen, A., & Duangsaeng, V. (2013). Success Factors in Community-Based Tourism in Thailand: The Role of Luck, External Support, and Local Leadership. *Tourism Planning & Development*, 11, 106–124. <https://doi.org/10.1080/21568316.2013.852991>
- [15] Mason, M. (2008). Complexity Theory and the Philosophy of Education. *Educational Philosophy and Theory*, 40(1), 4–18. <https://doi.org/10.1111/j.1469-5812.2007.00412.x>
- [15] Matteucci, X., Koens, K., Calvi, L., & Moretti, S. (2022). Envisioning the futures of cultural tourism. *Futures*, 142. <https://doi.org/10.1016/j.futures.2022.103013>
- [16] Ministry of Foreign Affairs, Kingdom of Thailand. (2017). *Sufficiency Economy Philosophy: Thailand's Path towards Sustainable Development Goals*. Retrieved from [file:///D:/Dr/Lite%20Prof/Sufficiency%20Economy%20Philosophy\\_SDG.pdf](file:///D:/Dr/Lite%20Prof/Sufficiency%20Economy%20Philosophy_SDG.pdf)

- [17] Murphy, P.E., & Murphy, A. E. (2004). *Strategic Management for Tourism Communities: Bridging the Gaps*. Great Britain: Cromwell press.
- [18] National Economic and Social Development Board (NESDB). (2002). *The Nine National Economic and Social Development Plan (A.D. 2002 – 2006)*. Bangkok, Thailand: Office of the Prime Minister of Thailand.
- [19] National Economic and Social Development Board (NESDB). (2007). *Summary of the Tenth National Economic and Social Development Plan (A.D. 2007 – 2011)*. Bangkok, Thailand: Office of the Prime Minister of Thailand.
- [20] National Economic and Social Development Board (NESDB), *Sufficiency economy*. Retrieved from <http://www.sufficiencyeconomy.org/old/en/files/4.pdf>
- [21] Nuttavuthisit, K., Jindahra, P. & Prasarnphanich, P. (2015). Participatory community development: evidence from Thailand. *Community Development Journal*, 50(1), 55–70.
- [22] Oakes, T. (1998). *Tourism and Modernity in China*. London: Routledge.
- [23] Pantasen, A., Premcheun, S., & Kieddetchpunya, P. (2003). *Applying King's Sufficiency Economy, in Small and Medium Industry*. Bangkok: The Thailand Research fund.
- [24] Peerapun, W. (2012). Participatory planning approach to urban conservation and regeneration in Amphawa Community, Thailand. *Asian Journal of Environment-Behaviour Studies*, 3(7), 36-44.
- [25] Piboolsravut, P. (2004). *Sufficiency economy and A healthy community*. Retrieved from <http://www.sufficiencyeconomy.org/old/en/files/17.pdf>
- [26] Pratomlek, O. (2020). Critical nature: community-based tourism in Thailand: impact and recovery from the COVID-19. Retrieved from <https://www.csd-s.chula.org/publications/2020/6/2/critical-nature-community-based-tourism-in-thailand-impact-and-recovery-from-the-covid-19>
- [27] Pruetipibultham, O. (2010). The sufficiency economy philosophy and strategic HRD: a sustainable development for Thailand, *Human Resource Development International*, 13(1), 99-110.
- [28] Senanarong, A. (2004). *His Majesty's philosophy of Sufficiency Economy and the Royal Development Study Centres*. Retrieved from <http://www.sufficiencyeconomy.org/old/en/files/15.pdf>
- [29] Sin, H. L., & Minca, C. (2014). Touring responsibility: The trouble with 'going local' in community-based tourism in Thailand. *Geoforum*, 51, 96–106. <https://doi.org/10.1016/j.geoforum.2013.10.004>
- [30] Sofield, T. H. B., & Li, F. M. S. (2007). Indigenous minorities of China and effects of tourism. In R. Butler & T. Hinch (Eds.), *Tourism and Indigenous Peoples: Issues and Implications* (pp. 265–280). Oxford : Butterworth-Heinemann.
- [31] Somyana, W. (2012). Morality based on sufficiency economy philosophy with the management of sub-district administrative organization (sao) to raise the sufficiency
- [32] Soonsan, N. (2017). Stakeholder Management for Tourism Businesses: The Case of Thailand. *Catalyst*, 15(1).
- [33] Sufficiency Economy Movement Sub-committee. (2007). *Sufficiency economy implications and applications*, Thailand: Office of the National Economic and Social Development Board.
- [34] Telfer, D., & Sharpley, R. (2007). Tourism and Development in the Developing World. *Tourism and Development in the Developing World*, 1–263. <https://doi.org/10.4324/9780203938041>
- [35] Theerapappisit, P. (2009). Pro-poor ethnic tourism in the Mekong: A study of three approaches in Northern Thailand. *Asia Pacific Journal of Tourism Research*, 14(2), 201-221.
- [36] Tourism Authority of Thailand (TAT), (2007). *Thailand Tourism Awards 2007*. Retrieved from <http://www.tourismthailand.org/news/content-382.html>
- [37] Tourism Authority of Thailand. (n.d.). History. Retrieved from <https://www.tat.or.th/th/about-tat/history>
- [38] Ubonsri, B., & Pannun, A. (2013). A study of applying sufficiency economy to lifestyles and use of resources at community levels. *Procedia Environmental Sciences*, 17, 976-983. doi:10.1016/j.proenv.2013.02.116
- [39] United Nations (UN). (2001). *Managing sustainable tourism development*. Retrieved from [http://www.unescap.org/ttdw/Publications/TPTS\\_pubs/Toreview\\_No22\\_2141.pdf](http://www.unescap.org/ttdw/Publications/TPTS_pubs/Toreview_No22_2141.pdf)
- [40] UNESCO. (2009). Sustainable Tourism Development in UNESCO Designated Sites in South-Eastern Europe. Retrieved from [http://portal.unesco.org/en/files/45338/12417872579\\_Introduction\\_Sustainable\\_Tourism.pdf/Introduction\\_Sustainable\\_Tourism.pdf](http://portal.unesco.org/en/files/45338/12417872579_Introduction_Sustainable_Tourism.pdf/Introduction_Sustainable_Tourism.pdf)
- [41] United Nations Environment Programme (UNEP). (2002). Ecotourism: principles, practices & policies for sustainability. Retrieved from <http://www.unep.fr/scp/publications/details.asp?id=WEB/0137/PA>
- [42] Vanagas, N., & Jagminas, J. (2011). The potential of community-based tourism development in vilnius district municipality, *Management Theory and Studies for Rural Business and Infrastructure Development*, 28, 157-163.
- [43] Venturelli, A. (2020). Corporate Social Responsibility in Tourism. In S. Idowu, R. Schmidpeter, N. Capaldi, L. Zu, M. Del Baldo, & R. Abreu (Eds.), *Encyclopedia of Sustainable Management* (pp. 1–5). Springer International Publishing. [https://doi.org/10.1007/978-3-030-02006-4\\_654-1](https://doi.org/10.1007/978-3-030-02006-4_654-1)
- [44] Vikash. (2019). Corporate Social Responsibility in Tourism Sector: A Review of Literature. *Think India*, 22(3), 697. [https://www.academia.edu/3465394/Corporate\\_social\\_responsibility\\_in\\_tourism\\_sector\\_for\\_promoting\\_peace](https://www.academia.edu/3465394/Corporate_social_responsibility_in_tourism_sector_for_promoting_peace)
- [45] Wang, Y., Shen, H., Ye, S., & Zhou L. (2020). Being rational and emotional: An integrated model of residents' support of ethnic tourism development. *Journal of Hospitality and Tourism Management*, 44, 112-121.
- [46] Wibulswasdi, C., Piboolsravut, P. & Pootrakool, K. (2010). *Sufficiency Economy Philosophy and Development*. Bangkok: Sufficiency Economy Research Project Bureau of The Crown Property.
- [47] UNDP. (2007). *Making Globalization Work for All: United Nations Development Programme Annual Report 2007*. United Nations Development Programme. <https://www.undp.org/sites/g/files/zskgke326/files/publications/UNDP-in-action-2007-en-.pdf>

# Marshalling Automation in the Exploitation Process of a Marshalling Yard

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## Abstract

Marshalling automation (automated shunting) in the exploitation process (operational process) of a marshalling yard requires a number of execution functions for its operation. These functions have a key role in its activity. At the same time, these functions are also an important element in the intensification of civil engineering, surveying/geodesy, and transport (especially rail transport). In this scientific research work, the SMART method was applied (S—Specific, M—Measurable, A—Achievable, R—Relevant, and T—Timebound). The main objective of this work is to demonstrate the activity of marshalling automation in the exploitation process of a marshalling yard relative to the days of the week over a time horizon of a full month. The subject of the scientific research work was carried out on a site in a large marshalling yard in Central Europe, specifically in southern Poland. The marshalling arrangement (i.e., the marshalling system and the gravity shunting arrangement) was concentrated on the odd, so-called “loading direction”, which had a longitudinal arrangement in its track groups (railway groups). This was conducted over a time horizon of a full month—from 1 to 31 March 2022—for each day of the week. This work included a monitoring of the number of railway cars (wagons) that entered (both planned and actual) the arrival tracks group. Then, as a result of the exploitation process of the marshalling yard, the number of gravity shunting railway cars (both planned and actual) per group of directional railway tracks was monitored. The subject matter carried out demonstrated the strong exploitation process of the marshalling yard, primarily the hump (marshalling hump) on Saturdays, Sundays, and Mondays—particularly those that exposed the work on Sundays and Mondays (both for railway cars entering and those that were of the gravity shunting variety). Other days of the week showed less intensity in activity. A strong interaction at the plan–reality interface for marshalling automation in the marshalling yard exploitation process was also demonstrated. The realised scientific research work will play an important role in shaping marshalling automation by providing results that constitute a platform for discussion among a wide range of global scientists and professionals. The article was prepared under the research subvention of the AGH University of Krakow, No. 16.16.150.545 in 2023.

**Keywords:** marshalling automation, geometry, transport, monitoring, marshalling yard, station, marshalling hump, hump, gravity shunting

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# A Socio-Pedagogical Perspective on Human Alienation and Dependence on the Economic Factor in Societies in Progress

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## Abstract

The economic and political model adopted by Western democratic countries has demonstrated a notable degree of success when compared to many other nations around the world, despite occasional crises and challenges. It has facilitated ongoing advancements in science, technology, and economics, leading to increased production and consumption. The model's success has been further underscored by the political and economic failures of former communist nations a few decades ago, which subsequently embraced Western ideals. However, the presence of freedom of thought in Western countries has given rise to a continuous debate about the negative consequences of this development. Philosophers, sociologists, political scientists, economists, writers, and education researchers, among others, have diligently examined and dissected the often-concealed aspects of technological progress. These include issues such as alienation, distortion, and conformity among individuals, as well as indiscriminate exploitation of resources, which can ultimately lead to environmental degradation. Educational institutions, which play a significant role in shaping economic policies, also bear a share of responsibility for these consequences. Despite these recognized drawbacks, this economic model continues to be vigorously promoted, and in some cases, imposed upon other nations across the globe. This article delves into this complex issue, seeking to shed light on the challenges and implications associated with the widespread adoption of this economic model.

**Keywords:** human alienation, homologous behavior, conformism, environmental education

## 1. A SHORT HISTORICAL PERSPECTIVE ON ENSLAVEMENT AND HUMAN ALIENATION

Since ancient times, man has seen it more reasonable to gradually replace anthropophagy with slavery. One specific example of slavery can be observed after wars, where those on the losing side who managed to escape would often be enslaved by the victorious group. Almost the entire history of mankind is a history of war and in some way a history of slavery. Compared to other species, the practice of enslaving others, stands out as one of the most distinguishing features of the human species. For ancient Greeks, slavery was perceived as a natural hierarchy that existed among people, and Aristotle justified it. According to him "slaves possess strong bodies suitable for working, while the free people have well-suited bodies for engaging in political life." (Berti 1997, p.295) Aristotle justified slavery from the biological traits part. Some people are suitable for slavery status. History indicates that people have done commerce not only with products but also with slavery. According to philosophy, human's relationships were not Spinozian Reports (There is nothing more important to the man than the man) but Hobbesian ones (The human is a wolf for the human). When the loser escaped from the war he becomes a slave. Spinoza did

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not think of the benefit of slavery but of freedom. And the dream of freedom tormented not only philosophers but also sociologists, anthropologists, and writers. It is mainly the illuminists who believe in society, human freedom, and fraternal human relations.

According to them, individuals truly benefit themselves when they also contribute to the well-being of others. In this view, society rewards individuals for their positive actions and behavior. Enlightenment thought influenced society and there was a gradual awareness that man should treat others as himself. This was reflected in the political power and slavery was gradually abolished by law. But forms of slavery remain. The place of slavery is taken by the exploitation of workers and their alienation. This issue has been extensively analyzed by Marx, Engels, Feuerbach, and many other authors. According to Marx, in the capitalist economy, the worker becomes a commodity by alienating his personality and productive activity. This is a form of economic alienation. While, according to Feuerbach, alienation is also religious. Also, man is reified by disappearing into society; and is completely influenced by it. According to Marx, the worker is involuntarily or voluntarily alienated, transformed into an instrument, thing, object, or tool; is invalidated. The more he produces, the more enslaved he becomes.

## 2. THE DOMINANCE OF THE ECONOMIC FACTOR HAS REPLACED EDUCATION WITH PROFESSIONALIZATION OR BLIND SPECIALIZATION

The economic factor after the time of Marx has become more and more dominant in human life. Naturally, the basic survival needs are primary, but the problem is that there is an increase in the unrestrained thirst to accumulate wealth, because this accumulation makes one 'achieved', 'secure', and 'powerful'. He does everything for wealth because he thinks that when he has wealth, he has everything. First of all, he experiences the "pleasure" of consumption. Based on the comfort and pleasure that consumption evokes, artificial surplus needs are constantly created, which take more importance than real needs. The ancient cynical philosophers, who considered man completely corrupted by artificial needs, i.e. slave to these needs, seem more actual than ever. With the development of technology, artificial needs increase in geometric progression. Technology is used as much for fun and play as for work. If you look carefully, adults play with their toys designed by engineers and architects and they don't have a parent to tear them away from them. Man becomes more and more dependent on these needs, which are bought with money. Thus it becomes more and more economically and financially dependent. To secure the money, it must be diverted to productive activity or often to illegal and criminal ones. Exaggerated consumption generates the market, the economy. To complete this market, educational institutions are also included, which, instead of educating and specializing, prepare appropriate professionals in the service of the economic function. Thus people are involved, or stuck, in a gigantic economic mechanism. To adapt to this mechanism, they have lost their form by taking another form, they have also lost their freedom. Representatives of the Frankfurt School, mainly Adorno and Horkheimer, have made a deep analysis of the aforementioned factor. According to them, the economy has always had a dominant role in Western societies, where "mass culture was considered as a product of the market"<sup>1</sup>. And mentally, man is trapped, stuck in a formalism; forced to calculate and repeat. Referring to the aforementioned authors, the Italian researcher of human formation, Mario Gennari, says: "The power of repetition causes the blocking of thought and experience, as well as their connection"<sup>2</sup>.

And the other representative of the Frankfurt School, E. Fromm, expresses the opinion that with technical progress man has lost this humanity and has turned into an instrument of the economic machine, created by his hands and no longer sees himself as the highest goal of life. He is more interested in the productivity of his work and the achievement of success than the happiness and development of his soul<sup>3</sup>. According to E. Fromm, personal dignity is determined by the market: "His sense of personal dignity is not based on the assessment of his abilities. It depends on the demand in the market, or on the opinion of others about its 'allure'"<sup>4</sup>. The impact of education on people in a society in unstoppable technological and economic progress is also treated by the Italian philosopher, Carlo Sini, in the article entitled: *Le arti dinamiche Philosophy and Pedagogy*. According to him, not only workers are gears of the economic mechanism, but also technical managers and engineers do not understand the effects of actions on the environment or the person himself. "The development of science and technology is considered unsuitable, and there fore its actors"<sup>5</sup>. According to him, all importance is given to specialization, and ethical responsibility is left aside. Contemporary knowledge has a limit to their continuous specialization<sup>6</sup>. "It is required to proceed in the opposite

<sup>1</sup> Adorno F. Gregory T. Verra V. Manuale di storia della filosofia. Roma- Bari 2004. p. 392

<sup>2</sup> Gennari, M (2001) Filosofia della formazione dell'uomo. Milano p.492

<sup>3</sup> Fromm E. Psychology and religion (perkth. shqip Psikoanalizadhefeja, Plejad, Tiranë, 2002). p.94

<sup>4</sup> Same p.95

<sup>5</sup> Sini, Carlo (2003) Le arti dinamiche Filozofia e Pedagogia Milano, CUEM p. 189

<sup>6</sup> Same p.189

direction. "that is, for the "technicians" of knowledge to have an ethical responsibility, and therefore to have a philosophical point of view on the basics of what they are doing"<sup>7</sup>. Sini takes a quote from Nietzsche: "We must put an end once and for all to the "inkoshient engineer" <sup>8</sup>. Only if we limit ourselves to the catastrophes caused by engineering masterpieces, without going into the self-destructive use of technology in war, we understand how prophetic Nietzsche was. The Italian philosopher is against the thesis, according to which formation becomes science, and for this, he says: "that formation can become 'science', as it claims today or only an imitation of it, is immaturity and also a mistake big"<sup>9</sup>. From what was said, it seems that we do not have a single-rooted formation, but its professionalization, specialization, deformation, and automation, become a gear in the production process. The role of the school seems to have changed from a formative to a deforming one, where professional education is given more importance than human formation. There was and is an ongoing debate on this matter. Educational institutions prepare specialized but easily submissive individuals who are not used to reflecting on the possible consequences of their work both on themselves, on people, and on the environment. Sini expresses this best when he writes: "We have a reduction of the laureate to a blinded person to become a slave of the labor market as soon as possible, of course in the interest of the general increase of financial capital"<sup>10</sup>.

### 3. HOMOLOGOUS BEHAVIORS IN HUMANS AND CONFORMITY

No matter how complex human behaviors seem, if we look more closely, we conclude that they are not separated from similarity. This happens because people have similarities between them, it occurs from the tendency they have to imitate, from the influence of the behavior of others, the influence of advertising, when it comes to consumer behavior, etc. Economists, sociologists, philosophers, and other researchers have done a wide treatment of the factors that lead to the homologation of behaviors. According to J. Galbraith, a lifestyle has spread that, despite the changes, goes towards the homologation of consumer behavior. An idea of progress is spread where the stimulation of physiological needs modifies individual behavior: "The creation of debts, regulated by a system of codified norms, directs the destiny of the consumer, whose individualism does not make him free, but confronts him with a double danger: advertising rhetoric, which stimulates more and more artificial and expensive needs; and imitation, into whose whirlpool fall, unconsciously, the poor, imitating those who are richer"<sup>11</sup>. As mentioned, the two factors that lead to this behavior are stimulation of artificial needs and imitation. Not only in the media with countless advertisements but also in art the same laws operate and often their function is to promote cultural conformity. This issue has been addressed by the aforementioned representatives of the Frankfurt School, mainly Adorno and Horkheimer. According to them, people stuck in the production and consumption chain become individuals ready for any massive behavior. And the cultural industry has simply been entrusted with the task of promoting "consumer conformity" and their entertainment: Man is entirely at the function of the product, and as said, often forced to perform repeated automated actions. And as after the aforementioned Italian researcher Carlo Sini, life is adapted to the perfect circularity of the 'technological' function: 'exact' repetition, without rhythm, that is, without memory and oblivion<sup>12</sup>.

Manufacturing activity, mainly in factories and machinery, causes automated actions to be repeated. This is what the Italian philosopher Elio Franzini expressed in the book *Moderno e Postmoderno*. According to him: "the limitless activity of modernism is simple repetition that takes man away from himself, like a group of animals, "a great community of ants"<sup>13</sup>. Always in this book, Franzini brings V. Benjamin's opinion "against the division of labor that makes people specialists" and against "their zeal for work"<sup>14</sup>. The consequences of progress are even greater, it has produced a person forced to live a life of running to adapt to the pace of development. Thus it acquired some pathological features. It has become flexible, agile, intemperate, hypocritical, etc. Work commitment has turned into work alienation. A society in unstoppable progress corresponds more and more to a man in shock.

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7 Same p. 190

8 Same p. 190

9 Same p.191

<sup>10</sup> Same p.194

11 Gennari, M (2001) *Filosofia della formazione dell'uomo*. Milano. p.460

12 Sini, Carlo (2003) *Le arti dinamiche Filosofia e Pedagogia* Milano, CUEM p. 192

13 Franzini, E. (2018) *Moderno e postmoderno* Raffaello Cortina Editore, Milano p.33

14 Same p.86

#### 4. PEOPLE ARE ALIENATED AND REDUCED TO OBJECTS AND THE ROLE OF THE SCHOOL IS REDUCED TO THE SERVICE OF THE PRODUCT

Along side the authors I mention such as Marx, representatives of the Frankfurt School, etc., researcher Patrice Canivez makes an extensive analysis of the issue of alienation and the reduction of man to a thing in contemporary society in the book entitled *Éduquer le citoyen*. According to him, the values of contemporary society are work, productivity, and progress based on science and technology<sup>15</sup>. Expressing himself as follows, he compares workers to instruments that can be used by others, not by themselves: "In this society, individuals have, first of all, the status of a worker. They must create a place for themselves, distinguish themselves with the knowledge and experience gained, and transform into usable instruments in the production and exchange process"<sup>16</sup>. He even considers people as objects: "They are, 'objectified' and identifiable in the subjective function they perform in the framework of the social mechanism. As workers, they have no value in themselves. Their value consists in their use and, in the last instance, in their competencies, knowledge, and experience - which give them a certain price"<sup>17</sup>. In contemporary society, everything has a price, which is always increasing: goods, things, footballers, singers, works of art, etc., and of course workers. The latter are entirely at the service of the ever-progressing social-economic mechanism."Participation of the individ into society, through which he learns to consider himself an important member of the collectivity, is an initial form of education"<sup>18</sup>. This author closely connects the productive activity with the capture of the uniqueness of the individual and with social participation: "Through work and the exercise of some social function, the individual reaches the degree to master his nature, the power of his passions and submit to universal rules: actualization is also socialization. More precisely, work is educational, because it makes a person universalize, overcome the particularity of his nature, arriving at the objective reality"<sup>19</sup>. Canivez distinguishes the positive and negative sides of the giant mechanism of production, for which he says: "This mechanism of production and exchange has positive sides that must be recognized, it produces comfort and prosperity, and it also does the initial education of people. There are also shortcomings. The deficiency consists in the impossibility of providing individuals with a human life"<sup>20</sup>. And according to this author, just as for the representatives of the Frankfurt School, the material side does not fulfill the spiritual side and man cannot be free, he is limited to his freedom. This life presupposes freedom. A life worthy of human beings must contain values and goals, regardless of benefit to someone or something. But contemporary society requires individuals to feel themselves as objects. It entangles them in the web of interdependence, in power relations where no one is master of himself. Thus it turns out that no one in this society is free<sup>21</sup>. The author, whom we are dealing with, is not simply limited to the crutch of modern society but demands that citizens become owners of themselves. According to him: "Political action is required where the community of citizens realizes some model of justice"<sup>22</sup>. About the role of the school, he says: "In a democracy, the school must educate active citizens." The school should give citizens the culture and taste for discussion, which enables them to understand the problems and proposed solutions and to discuss them"<sup>23</sup>. The school must prepare and encourage active participation in decision-making. "The school must teach citizens to reject any arbitrary and violent policy based on rational criteria and oppose it with the ideas of justice"<sup>24</sup>. Similar thought to that of the American pragmatist J. Dewey, but the opposite is happening, the school is more in favor of production than of democratization.

A similar position was held by the Hungarian philosopher G. Lukács. In the manual entitled *Manuale di Storia della Filosofia*,<sup>25</sup> a paragraph is dedicated to this philosophy: "In capitalist societies, not only things are reduced to commodities, but also the worker is forced to consider his work and thus his freedom as a commodity. There is thus a system that leads to the complete specialization of work and therefore to the alienation of man. In such a system where everything is regulated for production and man himself is reduced to a thing, reified, there is no place for a truly critical attitude and a purely contemplative form of knowledge is developed of the conditions and criteria of calculation that allow the functioning of the whole and more efficient and productive"<sup>26</sup>. From this phrase it seems

15 Patrice Canivez (1990) *Htler Paris Éduquer le citoyen?* Perkth. Alb. Të edukohet qytetari p.182

16 Same p. 182

17 Same p. 182

18 Same p. 182

19 Same p. 183

20 Same p. 183

21 Same p.183

22 Same p.184

23 Same p.197

24 Same p.198

25 F. Adorno T Gregory V. Verra (1996) *Manuale di storia della filosofia* Laterza Roma-Bari.

26 Same p. 381



that knowledge is limited to serve only production and critical thinking is missing. This "contemplative" character of knowledge has been imposed not only on conscience but also on science and modern philosophy that corresponded to the birth and development of capitalist civilization<sup>27</sup>. Lukács considers it a mistake to identify alienation with objectification: according to him: "objectification is related to the fact that man is a historical being and lives and acts in a material nature, while alienation is an aspect in particular historical conditions, precisely in capitalist civilization where production is alienated because the criteria of private property apply, man is reduced to a commodity, etc."<sup>28</sup>.

From what we saw according to these authors, and not only, people have been reduced to objects. They require their awakening and responsibility, and the educational systems are also responsible for this. Generally, institutional care for formation lasts until a certain age. Then, after the basic education elements and the basic knowledge elements are taken, the profiling begins, where professional education is of particular importance, which prepares ready, specialized people to enter the labor market or to become an employee of a mechanism, as he says the Italian scholar Claudio Magris in *Prefazione al Maestro pulce* where he writes: "To become an adult means to despise individual completeness to become a one-sided gear of the social mechanism"<sup>29</sup>. Instead of being the opposite, paradoxically man, growing older, loses individual completeness. Of course, it is not the same for all countries, but taking each other as a model, the differences are not so great. The school prepares semi-enslaved people to serve others and not themselves. For this one-sidedness of the school, there is a somewhat radical criticism. In a book entitled *Curriculum, Foundations, Principles, and Issues*<sup>30</sup> several authors dealing with this issue are discussed. One of them is Peter McLaren, who expresses his disdain for the society within which schools exist. According to him, "Schools are discriminatory because they divide students according to the jobs they will perform, which deepens class differences"<sup>31</sup>. Not only does the school do nothing to diminish class differences, it deepens and perpetuates them. "They participate in the perpetuation of the logic of production and consumption that benefits the few and shuns the majority"<sup>32</sup>. They do nothing to reflect on the effects of the rampant consumer society. Paul Goodman is also treated in this book. According to him, society is sick and with false values, which has produced sick schools. Schools are about little more than education; they provide jobs for millions of people<sup>33</sup>. In other words, the professional side dominates at the expense of the human side. According to Ivan Illich, the elimination of schools constitutes a release from institutional and capitalist indoctrination<sup>34</sup>. This author deals with the consequences of progress not only on man but also on the environment, which we will talk about in the following paragraph.

## 5. THE IMPACT OF PROGRESS ON MAN AND THE ENVIRONMENT, THE NEED FOR AWARENESS AND ECOLOGICAL EDUCATION

Although the development of science and progress is for the good of humanity and many sociologists, philosophers, mainly positivists had this opinion, it has turned out that this development has not brought heaven to earth, even though for many pessimistic authors it is considered self-destruction. Nietzsche was among the first to support the positivists, but he soon changed his mind. He even accused that science is being mythologized as well as religion; one religion is being replaced by another. Throughout its history, the technical process has significantly influenced human behavior, but now it has taken on extraordinary proportions. Society's dominance over nature has reached the highest possible level by exploiting it without criteria. It is not used for real needs, but to maintain an exaggerated stage of life until it is wasted. This way of life is promoted sparingly by the audiovisual media, a material imposed by the media. This issue has been addressed by many authors and is more than current. Max Horkheimer in the studies summarized in the volume *Eclissi della ragione* identifies the reasons for progress that risks destroying what would be its goal, i.e. the idea of man. There is an irrational domination not only over man but over nature, understood as a simple object of human exploitation<sup>35</sup>. As it was said, when the speaking man is considered an object, it is easier to consider nature as an object of exploitation. The Italian researcher Mario Gennari in the above-mentioned book *Filosofia della formazione dell'uomo*, explains extensively the consequences of an exaggerated standard of life and unstoppable progress both for one and for the environment. This content refers to

27 Same p. 381

28 Same p.382

29 Gennari, M. (2001) *Filosofia della formazione dell'uomo*. Milano, p.396

30 Allan C. Ornstein, Francis P. Hunkins. *Curriculum, Foundations, Principles and Issues* Prkth. Alb Kurrikula, Baza, parime dhe probleme Istituti i Studimeve Pedagogjike, Tiranë 2003

31 Same p.70

32 Same p. 70

33 Same p.72

34 Same p.73

35F. Adorno T Gregory V. Verra (1996) *Manuale di storia della filosofia* Laterza, Roma-Bari p. 395

a series of authors who deal with this increasingly topical issue. Referring to Christopher Lasch states: "The attempt to extend the standards of Western life to the rest of the world will again quickly lead to the exhaustion of non-renewable resources, the irreversible pollution of the earth's atmosphere, and quickly, the destruction of the system ecological system on which human life depends"<sup>36</sup>. Along with the environment, man himself is at risk; his culture, traditions, and history. Now a single culture is destroying other cultures to dominate. This matter is dealt with extensively in the aforementioned book. The Italian philosopher, referring to Lorenz, writes: "In addition to saving the earth, we must act towards the integration of different cultures and the respect of every cultural object, and in the inter-ethnic dialogue, the importance of protecting the biological structure of the species and the individual, threatened by sin, must be sanctioned. the last great one named by Konrad Lorenz: atomic weaponry"<sup>37</sup>. As we understand from this fragment, what is essential to the human species is being lost with technical progress. The issue of unbridled consumption of material goods and the indiscriminate use of natural resources has been extensively addressed by Hans Jonas, to whom Gennari refers when he says: "Our descendants have the right to live on a planet that is not robbed, more than to have wonderful care"<sup>38</sup>. The problem arises as to how much we have the right to consume natural resources and how much we will leave to future generations. We are not consuming, but we are indulging in squandering the wealth of our descendants. New artificial needs are invented and are imposed as necessary; the exaggeration in sports and absurd speed races, on land, in seas and oceans, in space (requiring life in space, destroying it on earth), leaving aside the self-destructive arms race, constitute the most flagrant case of this multiple material wastes, human, etc. Hans Jonas has formulated another categorical imperative: your action serves life earth.

As for other issues, the most radical is Ivan Illich. He considers the problems of the environment as problems of all mankind. In the book *Thinkers on Education*<sup>39</sup>, this author occupies an important place. Referring this author, it is written there: "Environmental and imbalance problems affect all countries equally"<sup>40</sup>. Ivan Illich calls for saving and limiting the means of communication: "For me, the alternative of society must be found in the conscious limitation of technology to those services that are useful. I mean limiting the speed of vehicles"<sup>41</sup>. He raised the foundations for the conception of a school more attentive to the needs of environment, to the results of its students, and to considering knowledge as useful for society<sup>42</sup>. Ivan Illich proposes the wisdom of the snail, both for the slowness and for the size where it interrupts in time the increase in the number of spirals of its shell because one more would progressively increase its size and thus it would be difficult for it to move. According to him, society will be limited in its activity. This requires self-awareness and educational institutions must do this. Environmental awareness should become one of the priorities of all education actors, which for Ivan Illich are many, except for those who are currently. The problem seems to be getting more and more acute. Perhaps it is no coincidence that the drastic climate changes of recent times with disasters called natural, but which are probably more human than natural. Italian economist Giulio Tremonti expresses his pessimism about the environment in the book: *La Paura e la Speranza*, where he writes: "We are consuming the future of our children, and we are doing it so fast that we are seeing the effects of our actions"<sup>43</sup>.

## 6. CONCLUSIONS

When dealing with problems of this nature, you can be called a Marxist, a neo-Marxist, or even a communist. This comes from the bivalent way of thinking that mostly characterizes the human being who finds it difficult to find a golden mean between two alternatives. The problem is not only in the analysis of these issues, but, as was said at the beginning of the article, without taking into account the many negative consequences for people and the nature of the Western economic model, this model is strongly advertised, if not imposed on them. Other countries of the world, a large number of people emigrate to these countries, often finding death during the journey and also making the problem of resource sufficiency even more acute when the whole world aims to live according to Western standards. Some change would be nice. Socratic lesson: *heal the soul more than the material side* it must have some application however late. It is not said that one model of an item will spread throughout the world, and it is possible that the human can work less to make room for formation or the spiritual side. Many philosophers, sociologists, and writers have given this idea, starting from Campanella to the Enlightenment and many others. In some countries,

36Gennari, M. (2001) *Filosofia della formazione dell'uomo*. Milano, p. 458

37 Same p.306

38 Same p.500

39 I.B.E-UNESCO *Thinkers on education*, perkth. Alb. Mendimtarët për edukimin 2008

40 Same p. 437

41 Same p. 438

42 Same p. 440

43Tremonti, G (2009) *La paura e la speranza*. Milano. p.10

such as in those countries, such a thing is being asked to be applied to a certain extent. Of course, this cannot happen without modifying the way of life, avoiding luxury, and artificial excess. As mentioned, Ivan Illich has given enough lessons in this direction. Since it is impossible to make radical changes, it is not said that no changes should be made. At a minimum, there should be an awareness of the exaggerated stage of life and its consequences. With the improvement of new technologies, of course, the work of the workers has been made easier, but little has changed. What changes in communication, where there is exaggeration, influence, and manipulation of an increasingly large number of people? Reflecting on what happens would constitute a start for change. Let the critical attitude spread through the now sophisticated means of communication.

## References

- [1] Adorno F. Gregory T. Verra V. (2004) *Manuale di storia della filosofia*. Roma- Bari.
- [2] Allan C. Ornstein, Francis P. Hunkins. (2003) *Curriculum, Foundations, Principles and Issues* Prkth. Alb Kurrikula [3] *Baza, parime dhe probleme*. Istituti i Studimeve Pedagogjike, Tiranë
- [4] Enrico Berti (1997) *Profilo di aristotele* Edizioni Studium Roma
- [5] Franzini, E. (2018) *Moderno e postmoderno* Raffaello Cortina Editore, Milano
- [6] Fromm E. (2002) *Psychology and religion* (perkth. shqip Psikoanalizadhefeja, Plejad, Tiranë.
- [7] Gennari, M (2001) *Filosofia della formazione dell'uomo*. Milano, Fq.492
- [8] I.B.E-UNESKO (2008) *Thinkers on education*, perkth. Alb. *Mendimtarët për edukimin*
- [9] Patrice Canivez (1990) *Htier Paris Éduquer le citoyen?* Perkth. Alb. Të edukohet qytetari
- [10] Sini, Carlo (2003) *Le arti dinamiche Filozofia e Pedagogia* Milano, CUEM
- [11] Tremonti, G (2009) *La paura e la speranza*. Milano.



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