



**TECHNICAL UNIVERSITY OF MOLDOVA**

# **JOURNAL OF SOCIAL SCIENCES**

**Scientific publication founded on June 1, 2018**

**2021**  
**Vol. IV (2)**

**ISSN 2587-3490**  
**eISSN 2587-3504**

**TECHNICAL UNIVERSITY OF MOLDOVA (PUBLISHING HOUSE)**  
**„TEHNICA UTM” (PRINTING HOUSE)**

### **Editor-in-Chief**

**Prof. univ. Larisa Bugaian**  
Technical University of Moldova  
[larisa.bugaian@adm.utm.md](mailto:larisa.bugaian@adm.utm.md)

### **Editorial Board**

Alexandru-Mircea Nedelea, PhD, "Stefan cel Mare" University of Suceava, Romania  
Alexandru Stratan, Dr.hab, Corr. Member of the Academy of Sciences of Moldova  
Anca Păunescu, Dr.hab., University of Craiova, Romania  
Carmen Nastase, Dr.hab., "Stefan cel Mare" University of Suceava, Romania  
Gabriela Prelipcean, Dr.hab., "Stefan cel Mare" University of Suceava, Romania  
Georgeta Stepanov, Dr. hab., Moldova State University  
Inga Stoianova, PhD, Free International University of Moldova  
Iuliu Turcan, PhD, Technical University of Moldova  
Larisa Bugaian, Dr. hab., Technical University of Moldova  
Lilia Chiriac, PhD, Technical University of Moldova  
Ludmila Ungureanu, PhD, Technical University of Moldova  
Nelly Turcan, Dr.hab., Moldova State University, Information Society Development Institute  
Margareta Florescu, Dr.hab., Institute of Advanced Research of the Academy of Economic Studies of Bucharest, Romania  
Maria Gheorghita, PhD, Technical University of Moldova  
Marilena-Oana Nedelea, PhD, "Stefan cel Mare" University of Suceava, Romania  
Nicolae Samson, Dr.hab., Gh. Asachi Technical University of Iasi, Romania  
Olivia-Cristina Rusu, Dr.hab., Academy of Economic Studies of Bucharest, Romania  
Rafael Ciloci, PhD, Technical University of Moldova  
Romeo V. Turcan, PhD, Aalborg University, Denmark  
Svetlana Albu, Dr. hab., Technical University of Moldova  
Svetlana Mira, PhD, Cardiff University, UK  
Svetlana Caterenciuc, PhD, Technical University of Moldova  
Svetlana Gorobievschi, Dr. hab., Technical University of Moldova  
Viorica Răileanu, PhD, Institute of Philology, Republic of Moldova

### **Responsible Editor**

**Dr. hab. Rodica STURZA**  
Technical University of Moldova  
[rodica.sturza@chim.utm.md](mailto:rodica.sturza@chim.utm.md)

### **Editorial Production:**

Dr. Nicolae Trifan  
Dr. Țurcan Iuliu  
Dr. Svetlana Caterinciuc  
Zinaida Stratan  
Rodica Cujba

**According to the Decision of the NAQAER No. 15 from 26.02.2021, JSS is classified as  
B+ journal**

**The Journal of Social Sciences is indexed in:**

1. DOAJ (Directory of Open Access Journals)
2. ROAD (Directory of Open Access scholarly Resources)
3. CEEOL (Central and Eastern European Online Library GmbH)
4. INDEX COPERNICUS (IC)
5. ZENODO
6. ERIH PLUS (European Reference Index for the Humanities and the Social Sciences)

**Main subjects areas of the Journal:**

- Economics Policy and Economic Policies
- Economics and Management
- Finance and Accounting
- Marketing and Logistics
- Arts and Design
- Pedagogy and Psychology
- Sociology
- Philosophy
- History
- Philology and linguistics
- Law

**How to publish a paper:**

1. Send the manuscript and information about the author to the **Editorial Board address:** [jes@meridian.utm.md](mailto:jes@meridian.utm.md), [rodica.sturza@chim.utm.md](mailto:rodica.sturza@chim.utm.md)
2. Manuscripts are accepted only by e-mail, in template file (<https://jss.utm.md/>)
3. Articles are accepted in original language, with name, abstract and keywords in English.
4. After a review, you will be notified of the editorial board's decision.
5. After the Journal has been published, we will send it to you immediately by mail.

## CONTENT

Otilia Velišek-Braško, Mila Beljanski, Nikola Vetnić	<i>“Dually exceptional” families: specifics, needs and problems...</i>	6
Babatope Matthew Ajiboye	<i>Unholy practices among youths in Nigeria: venoms breeding to a disjointed society.....</i>	20
Eleonora Olivia Bălănescu	<i>Acquiring ESP teacher competence through theory and practice.....</i>	33
Diana Marcu	<i>Online teaching and learning – a new reality.....</i>	43
Ludmila Ungureanu	<i>Comment faire progresser la pratique pedagogique?.....</i>	51
Iurie Subotin, Raisa Druță, Zinaida Chiosa	<i>Organization of the online laboratory practicum at inorganic and analytical chemistry - a possible solution for pandemic situation .....</i>	57
Mariana Golovaci	<i>Modeling construct of technical terminology valuing in the Romanian language by allophone students.....</i>	65
Hezi Aviram Shayb	<i>How COSO ERM and SHIModel algorithm can contribute to the development of enterprise performance .....</i>	76
Alina Popa	<i>Designing a holistic adaptive recommender system (HARS) for customer relationship development: a conceptual framework.....</i>	84
Fitri Yani Panggabean	<i>Implementation of government financial information systems toward local government financial statements: case study in Deli Serdang, Indonesia .....</i>	98
Titu-Marius I. Băjenescu	<i>Internet of things (IOT) conquers the whole globe.....</i>	107
Grigore Musteață, Anatol Balanuță, Vladislav Reșitca,	<i>Capitalization of secondary wine products - an opportunity for the wine sector of Republic of Moldova and Romania.....</i>	117
Razvan Vasile Filimon, Marius Mihai Băetu, Antoanela Patraș	<i>Aspects of vinegars production and marketing .....</i>	128
Alina Boistean	<i>The notion, classification and importance of goods classification in the light of the new civil regulations of Republic of Moldova.....</i>	139
Viorica Ursu, Natalia Chiriac	<i>Judging the case in the absence of the defendant removed from the trial on grounds of discipline.....</i>	164
Arina Ialanji		

## CONȚINUT

Otilia Velišek-Braško, Mila Beljanski, Nikola Vetnić	<i>Familii „Dual excepționale”: specific, nevoi și probleme .....</i>	6
Babatope Matthew Ajiboye	<i>Practici dăunătoare printre tinerii din Nigeria: reproducerea veninului într-o societate disjunctă.....</i>	20
Eleonora Olivia Bălănescu	<i>Obținerea competenței profesorului ESS prin teorie și practică.....</i>	33
Diana Marcu	<i>Didactică și învățare online - o nouă realitate.....</i>	43
Ludmila Ungureanu	<i>Cum să eficientizăm strategiile didactice? .....</i>	51
Iurie Subotin, Raisa Druță, Zinaida Chiosa	<i>Organizarea practicolui de laborator online în chimia inorganică și analitică - o posibilă soluție pentru situația pandemică .....</i>	57
Mariana Golovaci	<i>Constructul modelic al valorificării terminologiei tehnice în limba Română de către studenții alolingvi .....</i>	65
Hezi Aviram Shayb	<i>Cum COSO ERM și algoritmul SHIModel poate contribui la dezvoltarea performanței întreprinderii.....</i>	76
Alina Popa	<i>Proiectarea unui sistem holistic de recomandare adaptivă (HARS) pentru dezvoltarea relației cu clienții: un cadru conceptual .....</i>	84
Fitri Yani Panggabean	<i>Implementarea sistemelor de informare financiară a guvernului despre situația financiară a guvernului local: studiu de caz în Deli Serdang, Indonesia.....</i>	98
Titu-Marius I. Băjenescu	<i>Internetul lucrurilor (IOT) cucerește întregul glob.....</i>	107
Grigore Musteață, Anatol Balanuță, Vladislav Reșitca, Razvan Vasile Filimon, Marius Mihai Băetu, Antoanela Patraș	<i>Capitalizarea produselor secundare din industria vinului - o oportunitate pentru sectorul vitivinicol al Republicii Moldova și România.....</i>	117
Alina Boistean	<i>Aspecte de producție și marketing ale oțetului.....</i>	128
Viorica Ursu, Natalia Chiriac	<i>Noțiunea, clasificarea și importanța clasificării mărfurilor în contextul noilor regulamente civile ale Republicii Moldova.....</i>	139
Arina Ialanji	<i>Judecarea cazului în absența părâtului eliminat de la proces pe motive de disciplină.....</i>	164

[https://doi.org/10.52326/jss.utm.2021.4\(2\).01](https://doi.org/10.52326/jss.utm.2021.4(2).01)  
UDC 159.922.7:376.072



## “DUALY EXCEPTIONAL” FAMILIES: SPECIFICS, NEEDS AND PROBLEMS

Otilia Velišek-Braško<sup>1</sup>, ORCID: 0000-0002-9309-7360,  
Mila Beljanski<sup>2\*</sup>, ORCID: 0000-0002-1545-7949,  
Nikola Vetnić<sup>1</sup>, ORCID: 0000-0003-1748-6177

<sup>1</sup>Preschool Teachers Training College Novi Sad, Petra Drapšina 8, Novi Sad, Serbia

<sup>2</sup>University of Novi Sad, Faculty of Education in Sombor, Podgorička 4, Sombor, Serbia

\*Corresponding author: Mila Beljanski, [mila.beljanski@uns.ac.rs](mailto:mila.beljanski@uns.ac.rs)

Received: 04.28.2021

Accepted: 05.15.2021

**Abstract.** Families blessed with a child with developmental disabilities or a gifted child are not typical families. Such families are exposed to specifics in day-to-day function, establishing interpersonal relationships and fulfilling their family roles. The object of research and studies carried out so far are twice-exceptional individuals, thus excluding the families with one gifted child and another with developmental disabilities. Dually exceptional families have dual challenges in providing additional individualized support for children, in two completely different ways, in two different directions. Based on the results and the analysis of case study of two dually different families, areas in which additional support is required by such families and parents are identified according to family functions, as well as recommendations as to how to empower these areas.

**Keywords:** *family, gifted child, child with developmental disabilities, dually different families.*

**Rezumat.** Familiile binecuvântate cu un copil cu dizabilități de dezvoltare sau cu un copil supradotat nu sunt familii tipice. Astfel de familii sunt expuse la specificul unor funcții specifice de zi cu zi, stabilind relații interumane și îndeplinindu-și rolurile familiale. Obiectul cercetărilor și studiilor efectuate până în prezent sunt indivizi de două ori excepționali, excluzând astfel familiile cu un copil supradotat și altul cu dizabilități de dezvoltare. Familiile de excepție au duble provocări în a oferi de zi cu zi sprijin suplimentar individualizat copiilor, în două moduri complet diferite, în două direcții diferite. Pe baza rezultatelor și a analizei studiului de caz a două familii dual diferite, în articol sunt identificate domeniile în care este nevoie de sprijin suplimentar pentru astfel de familii și părinți, precum și recomandări cu privire la modul de abordare a acestor probleme.

**Cuvinte cheie:** *familie, copil supradotat, copil cu dizabilități de dezvoltare, familii dual diferite.*

### Basic functions of contemporary family

The understanding of the concept of education in present-day society has, due to current value systems, (our) image of the child and the pedagogical paradigms, necessarily affected the separation of the functions of the modern family, considering that the social context changed throughout history, which eventually led to a change in the role of the

family. The roles of the modern family are realized through [1] *reproductive function* – which is reflected in the continuation of the species by means of producing offspring; *emotional function* – which is the fullest expression of the contemporary family and is completely detached from the reproductive function, it represents the pillar in preserving harmonious family relations and family integrity and is thus the most important function, which affects psychological stability of each family member; *economical function* – in modern world it is reflected in consumer society, where family income affects its stability; *function of providing protection* – which encompasses social, moral, legal and economic protection; *educational function* – considering that education is the right of every child, this function is realized by means of state-implemented systemic solutions, the result of which is the inclusion of children in the educational system, through various forms and levels of education; *leisure function* – which takes place in different forms, within the family circle but also outside of it, such as outings, vacations, events, meetings, social gatherings. This role implies family members spending quality time together, thus enriching experiences. The specifics of realization of family functions and their combinations depends on priority areas, value systems and family approach, which gives each family its authenticity.

Each family is unique according to structure, dynamics, functioning and life cycle [2]. Family structure is comprised of members, their number and their role within it (father, mother, son, daughter, grandmother, grandfather, other close relatives). Family dynamics are determined by family subsystems, the relations within the same subsystem and those between different subsystems (spouse - spouse, parent - child/children, brother/sister - brother/sister i.e. siblings, and the relations with other family members). Different life cycles characterize the family in relation to defining roles within the unit.

### **Gifted children and their families**

When studying the phenomenon of giftedness, the emphasis is quite often placed on the family of gifted individuals and on how much it can affect the development and expression of child's productive giftedness. Giftedness in children can be detected quite early, especially in areas such as mathematics, music, ballet or chess [3]. However, the giftedness is most often defined as some exceptional ability which, as a rule, is followed by exceptional drive, exceptional motivation to master certain knowledge, skill, rules of a particular domain [4]. Giftedness is the organization of three characteristic properties: above average ability, fulfilling the tasks and creativity [5 - 13]. Therefore, giftedness can, according to today's inclusive concepts, occur in (almost) any domain of human activity, and exceptional achievement in different domains cannot be reduced to just one general intellectual ability [14]. The results referring to IQ alone are considered to be inadequate for determining giftedness, so a multiple identity system is accepted [15]. Determining the different characteristics of gifted students has a major role in creating the program, providing advice and determining the content intended for gifted students. In the literature, the terms giftedness and talent often appear alternately, but talent is generally considered to be an integral part of giftedness [9], i.e. giftedness in one narrow field (academic, artistic, sports talent). Despite the strong, unequivocal genetic influence, the literature [8, 9, 16] also shows that children's development and the development of giftedness in childhood are greatly influenced by family lifestyles, values, goals and other environmental characteristics. An important role in the growth, development and upbringing of gifted children is played by the parents, i.e. the children's families. Every child affects other children in the family, but because gifted children require so much attention and additional

strength (resources) they can be the source of added pressure for siblings [17], parents and even other relatives. Parenting is important as well as parenting skills that support optimal talent development, which can be practiced (taught) and nurtured [10] because it is important for parents to be aware of the important role that they play in their child's development in gaining attitudes and beliefs that critically influence talent development. Parents can help in understanding the verbal messages they send, such as encouraging praise and a healthy attitude towards challenges and failure. Because, “with the brilliance of giftedness its shadow grows as well” [18], i.e. the difficulties arise in upbringing, support for learning, encouraging the development of giftedness, but also other life and socio-emotional skills in students. Most authors agree that the definitions of adult and child giftedness differ from each other [19] because the criterion of giftedness in adulthood shifts from potential to achievement [20]. High achievement in any field is always associated with high standards set by an adult who himself provides an example of high achievement. Also, when family warmth and care (upbringing) are combined with stimulation and high expectations, an optimal situation is created for the development of talent [21].

### **Families of children with disabilities**

Within the family, parents are the foundations of the “institution of the family” and the key implementers of family functions. Special understanding needs to be provided to them, especially when it comes to the families of children with disabilities. Support for parents, those who ensure the quality of functioning within it, is of great importance for the entire family and its immediate members [22]. The specific situation, the fact that the child has a diagnosis, sets unique requirements and roles for all family members [1]. Parental knowledge of the fact that their child has developmental disabilities is a powerful event in the family environment. Parents' reactions to the fact that their child is different from other children can be different, because they depend on many factors, but there is a list of “common reactions” created based on parents' feelings, which are: shock, sadness, anger, denial, loneliness and eventually acceptance. The quality of relationships within the family and their construction are of special importance [24], primarily considering the relationship with a child with developmental disabilities, relationships with and between siblings, mutual relationship between partners, as well as relationships with other members of the extended family. Perception and building of the relationship between parents and siblings with the child with developmental disabilities depends on family experiences and the quality of relationships within the family, and less on the severity of the condition of the child with developmental disabilities [10]. Families of children with disabilities are atypical, in terms of internal relationships and dynamics. Such families have specifics and challenges in all roles: reproductive, economic, emotional, protective, educational and leisure role [1]. This affects the stability of the whole family, due to the stated aggravating circumstances that these families have, there is a high probability that the family will become dysfunctional. That is why the role of the state and society, and especially of the educational system is important, as it is up to them to provide all the necessary help and support so that every role is fulfilled and the family is maintained. But in stable, functional and accepting families of children with disabilities, parents and siblings, due to their specificity, strengthen certain characteristics, skills and competencies such as: persistence, resourcefulness, perseverance, patience, but also problem-solving skills, compassion, understanding of the situation and the feelings of others, accepting and respecting diversity, providing support to others [2, 25]. The path of parents to accepting the fact that



their child is different from other children is difficult and can even take a long period of time. Understanding of parents and the whole family in the process of coping to acceptance of having a child with disabilities is critical for building an open relationship and cooperation between parents and the main bearers of the institutionalized educational process, i.e. preschool teachers, school teachers and counselors. Cooperation with the family in the period of providing additional support to a child with developmental disabilities, especially during treatments and interventions of special pedagogues (special education teachers, speech therapists...) is crucial, but the approach and attitude towards parents has changed, as well as their role over the years. Different approaches and roles of parents have changes in the process of providing additional support to the child's learning and development and interventions over the last six to seven decades: the parent was seen as a "layman"; then the parents were associates in therapy; afterwards they encouraged and supported "strong mothers"; after that, they noticed partners in parents, and in recent years, parents have become "talent hunters" [26]. Although the trend in the 21st century is to identify talent for certain areas in a child with developmental disabilities, in Serbia and according to the current educational paradigm, partnership with parents is sought and promoted [2]. The partnership and teamwork of experts and parents in providing additional support in children's learning and development is the "formula" that provides the greatest opportunities for the child's progress in order to achieve the child's well-being in all dimensions.

### **Dually exceptional families**

There are families that are dually exceptional, having one child who is gifted and another child with developmental disabilities. Such dually different families have characteristics of both families with gifted children and families with children with disabilities. The specifics are reflected in the functioning of the whole family, as well as in the realization of family functions, because they have double challenges in providing additional individualized support to their children, in two completely different ways, in two different directions. So far, twice exceptional people and their families [27, 28] have been examined and it has been concluded that parents of such children have developed resilient parenting styles within the double exceptionality of their children and at the same time protected their child's talent and advocated for developmental disabilities because they wanted their child to make the most of his or her potential and not be limited by his or her disability. Parents faced challenges in attempt to develop advocacy strategies to manage their child's double exceptionality. However, the topic of dually exceptional families has not been addressed in the literature. The question is raised, what about parents who have one child who is gifted and another with developmental disabilities? What kind of relationships are set up in such, dually exceptional families? How do they manage to reconcile all the tasks and challenges that are set before them? Is there a lack of resources focused on dually exceptional families and their needs? This study deals with the ways in which dually exceptional families function, by noticing their characteristics, as well as the ways of providing additional support to their children, how they support and encourage them in different areas of development in different dimensions and functions.

### **Research methodology**

The paper presents a double case study, i.e. an attempt to present two families that are dually exceptional. The research used a case study method, a qualitative research that

uses an interpretive paradigm that seeks to understand the phenomenon in certain, real environments where the researcher does not try to manipulate the phenomenon of interest [24]. The sample of this study is convenient, within arm's reach of researchers, considering the place of contact with families in NGOs. Also, both families live in the same city, though the children attend different schools. As part of the case study in this research, a qualitative approach was appropriately applicable and suitable in understanding in-depth analysis of situations, relationships, and roles within the family. Presented are two dually exceptional families, considering that they both have a gifted child and a child with developmental disabilities. The aim of the research was to notice the specifics of dually exceptional families, to find out what difficulties and challenges they face in achieving family functions, as well as how they manage to respond to very specific and completely different needs for support in their children's education. The sources of information for the study were diverse: parents, siblings, teaching staff, peers, important people in the child's life, as well as the children themselves. Semi-structured interviews were used because they are suitable for this type of research, as they allow flexibility and a more open relationship between researchers and respondents. Moreover, they allow flexibility, which gives greater probability for more detailed answers as well as information about personal experiences of family members. We tried to get closer to the participants' experiences and their subjective constructs, starting from the position that the process of researching personal narratives is a reciprocal process that reduces the distance between researchers and participants.

### **Research participants**

Two families participated in this study. One family has three children, the oldest child stands out in several areas as gifted, and the middle child has autism, while in the other family the older child is from the autism spectrum, and the younger child is gifted. The age of the children are 12, 14 and 17 in one family, and 13 and 16 in another. Parents also participated in the research, the age of parents ranged from 44 to 51, as well as head teachers and school teachers, school counselors, classmates and family friends and relatives.

### **Research instruments**

For the purposes of this research, an interview with open-ended questions was constructed. The questions were: How did the care and upbringing of every child at an early age go? What are the most common emotional reactions in your family? What are the family relationships like (in relation to both adults and children)? What influenced the planning of the number of children in the family? What additional financial costs do you have in providing additional support in learning and encouraging the development of each child? How do you advocate for your children and how do you protect them? How do you achieve educational goals, tasks or requirements? How do you spend your free time with children? What difficulties do you have during family parties, leisure activities and celebrations?

Considering our study is of an exploratory nature, we opted for a qualitative analysis of the collected material. An analytical procedure was used, which is classified as a qualitative thematic analysis, which involves searching for dominant patterns in the collected material [29]. To identify recurring themes in the participants' thoughts, their responses were sorted by similarities and differences. During the analytical procedure, a comparison was made between our categories and the initial responses of the research participants.

## **Research results and discussion**

The results of the study show in more detail both families, their structure, members and relationships, while the aim of the study was to find out what difficulties and challenges dually exceptional families face through family functions, how they manage to respond to very specific and completely different needs for support in education of their children.

### **Review of a case study of the first family with three children**

There are three children aged 17, 14 and 12 in this family, the oldest child stands out in several areas as gifted, and the middle child has autism. The parents are of secondary and higher education and the mother is an expert in the field of education. Both are employed with stable jobs and regular incomes, living in mediocre socio-economic conditions. Children have their own room, but they all share one room, with a special learning space provided for each child. The gifted child stands out in the field of mother tongue, with correct speech and rich vocabulary, can read very expressively, recites extremely well, remembers verses with ease (which he showed at various school performances), excels in spelling and grammar (he also won Republic competitions), and is especially successful in writing various literary forms (he has published texts or parts of texts in newspapers and professional magazines). In addition to being talented in language and literature, the child is extremely successful in the field of computer science, he has participated in student conferences, as well as in national and international competitions, won placements and received various commendations in programming. Another area in which he excels and shows exceptional abilities is fine art, within which he stood out already in preschool age, and his works were sent to various competitions.

The child with developmental disabilities has autism, even at preschool age it was recognized that the child deviates from regular development, he was enrolled in regular school in the first grade, but at the age of 11 instead of subject teaching the transition was made to special school.

The child is verbal, but has difficulties with speech and communication, as well as with mastering school materials. Aided by the personal assistant, he is independent enough to make the trip to and from school along learned routes. With support he also mastered the use of cell phone for short verbal messages with a clear and specific purpose, e.g. to call his parents if he needs help, because the bus broke down and he needs to get off at another bus stop. In addition to school, he attends sports school twice a week, likes functional games, role-playing games and simple board games, and has an extremely small circle of acquaintances, mostly family friends.

Parents point out that it is very difficult and challenging for them to give support to every child (there is also the third youngest child), they admit that it was harder and more stressful for them with a child with developmental disabilities during preschool and at the beginning of elementary school, while with the gifted one it was more challenging and difficult to provide support in learning and meet the specialized educational needs of the child in elementary and secondary school.

### **Specifics of the first family according to family functions**

#### **I. Reproductive function**

- a. Gifted child:** From the beginning of the marriage, they wanted several children. They are proud of their offspring, i.e. of the child's success.

- b. **Child with developmental disabilities:** They decided to have a third child as well. Concerned about the offspring, i.e. for the future of the child and his care later in life.

## II. Emotional function

- a. **Gifted child:** Parents are happy and proud of the child's achievements; they are glad to tell acquaintances of him. "Pride of the family!" Loved and pampered.
- b. **Child with developmental disabilities:** Very much cared for, pampered and loved. Perhaps even overprotected, father in particular does not let anyone hurt his feelings. Expressed tolerance towards him and fewer demands made on him, i.e. indulgence.

## III. Protective function

- a. **Gifted child:** He was a victim of peer discrimination and violence in elementary school, precisely because he is gifted, i.e. a "nerd". There was no other systemic service for him.
- b. **Child with developmental disabilities:** Parents use systemic and legal possibilities of social protection, such as childcare subsidy, hiring a personal assistant, transportation tickets and lunch. However, in regular elementary school there were problems in relation to inclusion, individualization of school program and protection from peer violence.

## IV. Economic function

- a. **Gifted child:** In elementary and secondary school, he went to additional classes when he was preparing for competitions. He did not attend additional activities outside the education system, except for recreational volleyball for a short period. He is self-taught, independently learns, reads, works, researches, creates. "He likes to study on his own!" No extra classes or activities were needed, which would even be financially unfeasible, as it is already costly to provide him with a quality computer for work and study. Several times, he received monetary prizes for competition placements from the competition organizers. However, the trips to where the competitions were held cost extra at times.
- b. **Child with developmental disabilities:** Father states that "Financial assistance from the state is welcome, although it could be more." Some of the speech therapy and special education treatments they received through the service support of the state, and periodically they have paid for additional treatments themselves. They used some free activities of the Autism Association (DPOSA) when the child was younger. They regularly pay for recreational sports for nine months a year. These are all additional expenses, as well as the cost of transport (by car or to pay for bus ticket) when someone needs to take him to additional activities. Some activities and treatments could not be afforded such as swimming, horseback riding. In addition, there is a third child who also needs to be provided with and paid for certain activities and interests.

## V. Educational function

- a. **Gifted child:** It is clear that the child is the "hidden" type of gifted person. Schooling flows smoothly, performs all school tasks independently and in a disciplined manner and masters the contents. He did not have special individualized program, but additional work was done with him in additional classes and sections, and in that way, he was prepared for competitions.

**b. Child with developmental disabilities:** The child needs additional support in learning; he attends classes according to adjusted individual educational plan (IEP), due to difficulties in mastering contents that are complex, extensive and abstract. He attended regular kindergarten, as well as regular elementary school, but due to lack of personalized support for learning, demanding tasks and extensive content the inclusion did not succeed. He attends subject classes (as of 5<sup>th</sup> grade) in a special school with a personal assistant, who was with him for a year. He is making good progress in school, it is easier for him because of learning, but he has little opportunity to interact with his peers, because his classmates are children with extremely severe mental and health conditions, and are thus often absent from school. He is often alone in class with teacher.

#### **VI. Leisure function**

**a. Gifted child:** The child is quite an introverted type, closed, has only a few close friends. He seldom goes out with his peers. Leisure activities and having fun usually happen within the circle of family and family friends. They rarely go on summer vacations as a family. More often they make smaller family trips. He does not even like taking school field trips, and prefers spending time at home with his family.

**b. Child with developmental disabilities:** He likes to watch TV shows, cartoons, series, documentaries and movies that are in line with his interests (about animals, cooking...) or those with less complex and abstract content. He has only one close friend, as well as several acquaintances from the group of family friends. Occasionally, accompanied by the youngest brother and family friends, he goes for a walk or a visit, but only in the neighborhood, in the immediate vicinity. He is always invited to birthday parties held by children of family friends, to which he gladly goes.

Based on review of a case of the family with three children, and the specifics of providing support to children through family functions, it is clear that parents recognized the different specifics of their children and in accordance with modest financial resources supported learning and development of each child in an individualized way. In addition, there are particularities in the realization of many family functions, but the function of providing protection is the most pronounced. On the one hand, legal protection (representation) for the child with developmental disabilities is prominent because parents have to be additionally engaged in their realization, which takes a lot of time, which they then do not have to monitor the interests of the gifted child. A gifted child follows his interests quite independently, with greater engagement of parents and experts, the opportunities for potential development would be greater. Poor financial situation leads to the impossibility of participating in specialized programs for gifted children or other occasions (Worrell, 2019), which is the case with this family as well. There is a constant balance and desire to dedicate time to each child, as well as the whole family. The specificity is also expressed in the educational function, which is also an area in which realization is difficult. Specialized residences and centers of interest organized and funded by the state would be a resource that this family would gladly use, if they existed.

**A case study of the second family with two children** aged 16 and 13, where the older child is from the autism spectrum, and the younger child is gifted. This is an extended family that lives in a spacious house. Each child has their own separate room, as do other family members. Both parents have a university degree, the mother is an educational

specialist, employed with a permanent income and in good professional positions. The family lives in good socio-economic conditions. They regularly go on vacations and trips, often abroad.

The gifted child stood out as such already as an infant, he was extremely advanced in motor development, he quickly learned by learning from others and via modelling (this is the advantage of younger sibling), he had close interaction with older sibling in preschool, he was very adaptable and cooperative, poised and dedicated. During that period, he showed great interest in the topic of dinosaurs, which he studied and researched in detail. Already in the preschool period, he easily adopted and remembered various contents, data and topics, and he often had leading roles in kindergarten recitals. He was very respectful of the rules and norms of conduct both in the family and in the kindergarten; he was socially popular in the group. He manages schoolwork with ease, he is especially prominent in the fields of natural sciences (mathematics, nature and society), and his interests go beyond school materials or are entirely outside of them (prehistory, prehistoric animals...). Modern teaching methods applied by the class teacher enabled him to get occasional special project tasks in the areas of his interest. He also competed in mathematics, recitation and singing while in class. As far as school subjects are concerned, his dedication, knowledge and success come to prominence in mathematics, physics, chemistry, technical and computer science education, while extracurricular interests are in the field of motoring and cycling, which he studies very thoroughly, in detail and in depth. He participated in competitions in mathematics, physics and chemistry, won placements at the district level, and in addition to his school obligations, he is extremely dedicated and successful in cycling, where he also won medals at competitions.

A child with developmental disabilities has a disorder from the autism spectrum, the so-called Asperger syndrome. Specifics and developmental disabilities were noticed by parents at an early age and a lot of work was done to encourage the child's development at an early age: speech therapy treatments, special education treatments, psychological work with the child, kinesiotherapy, horseback riding, additional swimming activities, dancing, art workshops – all with the great engagement of all family members in providing additional support to the child. He attended regular kindergarten, regular primary school and regular vocational high school, that is, inclusive education is being successfully implemented. The student also has difficulties in establishing social relations, with milder problems of articulation of phonemes and has pronounced difficulties in learning, reading and writing. He masters school content thanks to the readiness of schools to individualize curriculum to meet his needs, to use learning methods and strategies according to his abilities and skills, and with the maximum engagement of parents and other members of the extended family in providing support in learning.

### **Specifics of the second family according to family functions**

#### **I. Reproductive function**

- a. Gifted child:** Great happiness and enthusiasm experienced when he was born. From the get go everything was simpler and easier. Parents worry, that he will have to take care of his sibling for the rest of his life.
- b. Child with developmental disabilities:** The mother states that "He was 'difficult' to raise, that is, it was difficult to provide care and upbringing for him, he was very demanding, with him everything was exhausting: falling asleep, staying in the yard,

going to the store...” He was very specific and “fluorescent”, a different, demanding child in the preschool period; all of that later changed as he adopted rules of behavior. There are concerns about him, what will become of him, how will he handle the educational system, and how will he handle the difficulties once he grows up. Will he be able to have his own family? Parents wanted three children but gave up on the idea.

## II. Emotional function

- a. **Gifted child:** Exceptional connection with the child, good understanding and very clear communication, cooperation flows with ease. Proud, enthusiastic parents for the child's success, very supportive. Emotionally, he is a very sensitive child, he requires constant encouragement. He swings from an extremely positive to a very sad and unhappy mood with very pronounced emotional reactions. It is difficult to follow him, due to his changeable mood.
- b. **Child with developmental disabilities:** After going through various emotional phases, parents accept their child, support his interests as well as his development and learning, they are proud of the child's successes and achievements, and at the same time worried about the child's progress and future, mostly because of independence. What makes the situation easier is that the child adopted an extremely positive attitude around age 6-7-8, he is ready to cooperate, very (self)disciplined and quite an obedient child... “He always looks on the bright side!” says his grandmother. He can delight people.

## III. Protective function

- a. **Gifted child:** There were situations in school when he was rejected in the company of his peers, because he does not do things that typical peers do, as he finds it boring or childish (for example, spraying water in the hallway, running around the classroom...). Besides pride, there is concern about the child's social relations and providing support in establishing relationships with his peers.
- b. **Child with developmental disabilities:** Due to peer violence (mostly psychological), parents, the head teacher, the school counselor and the assistant principal reacted and resolved some critical situations. It is important that problems were always solved. Visiting different services and different sectors in order to exercise the right to social protection is administratively very demanding, e.g. the same requirements should be submitted each year for the bus ticket. “As if it's a cold we're talking about, and the situation can change after a year!” says the father.

## IV. Economic function

- a. **Gifted child:** Additional activities (additional classes, visits, tours, trips...), extracurricular interests are additionally financed, while preparations for competitions for academic knowledge are done in school with additional work with parents. A great commitment to cycling requires extremely large investments from parents (purchase of equipment, training membership fees, participation in competitions...).
- b. **Child with developmental disabilities:** Additional treatments, development incentives and learning support, cost a lot on a monthly basis, because these services are either unavailable (due to them not being present at all) or are insufficiently available through systemic solutions (for example, in the development counseling center, appointments for treatments are given only once a week or every two weeks, which

is extremely short in the programs of early intervention, because it is necessary to work very intensively at an early age). The invested costs for the child's development and well-being are invaluable, but everything was worth it - said the parents.

## V. Educational function

- a. **Gifted child:** Very easily masters the regular school content, and in-depth study of areas that are part of extracurricular topics is carried out with support of the family (entire family follows the areas of interest, from dinosaurs to cycling). Of course, the child's self-commitment and self-mastery and study of topics from the available sources of information are expressed (most pronounced are internet searches, TV programs, encyclopedias and of course mentors, coaches and other professionals and peers within the same circle of interest...). Loves to compete, loves to show off his knowledge and skills, he is motivated with prizes, competition placements, medals... (it is safe to say that he is a successful type of a gifted person). Of course, the child's self-commitment and self-mastery, study of topics and with available sources of information are expressed.
- b. **Child with developmental disabilities:** With intensive and constant provision of additional support in learning, in mastering the content and with involvement of several family members (mother, father, grandmother, brother and aunt), due to insufficient independence in learning. The child has most difficulties due to pronounced dyslexia and dysgraphia. Working together, the results in mastering school content are excellent. He likes to learn and good results encourage him.

## VI. Leisure function

- a. **Gifted child:** He attends birthday parties or organized gatherings with his peers, gladly invites friends and acquaintances as guests and likes to organize gatherings at home. He hangs out with children from the neighborhood, goes to the city center, visits theaters, cinemas, parks on his own with friends... He knows how to impose only his own topic of interest, but those topics are not so deeply interesting to other children, and he does not know how to adapt enough to "typical" topics of his peers. That is why he mostly hangs out and is attached to his peers who are in his area of interest (from cycling club). His peers and his interests become a priority over family activities and socializing.
- b. **Child with developmental disabilities:** He follows "trendy" peer topics such as popular computer games, movies and music, so he shares that with a small number of peers. Parents take it upon themselves to initialize and organize the socializing with peers, who are mostly family friends or classmates who attend home celebrations or regular socializing, because they need support in social life. He rarely he goes for walks, visits, to cinema with his brother and some peers... In the family, he likes family activities, rituals and socializing (drinking coffee together, playing cards...).

Based on review of a case of the family with two children, it can be noticed that they face numerous challenges within each family function. According to the data, the realization of the educational function stands out as the most demanding. Parents are extremely committed in this field to respond to completely different support needs in encouraging learning and development. This is recognized in numerous incentive activities and treatments for the child with disabilities and the inclusive approach to his education, as well as in enabling the gifted child to develop his potential and meet specialized



educational needs in school and extracurricular activities. The realization of the above examples of providing additional support in learning and development for both children is associated with high financial costs and investments, and thus the economic function of the family is burdened. The two dually different families observed are each in their own way special and specific, in terms of the number of family members, internal relationships, priority areas and socio-economic status, but the fact that they both have one gifted and one child with developmental disabilities common for both families. Based on the double case study, it is possible to notice that within each family function in these families there are dual challenges, i.e. a challenge and/or difficulties in one way when the gifted child is concerned, and in another when the other child is in question, and most often that occurs in two separate directions (e.g. with reproductive function there is great pride and vision of success with one child, while at the same time pronounced concern is expressed for the future of the other child). It is also noticeable that the most expressed challenges in fulfilling family roles such families have in the economic and educational role, due to additional financial expenses necessary in order to provide learning support, regardless of whether it is for the sake of encouraging giftedness and specialized educational needs and interests, or it is due to necessity of providing additional learning support for the child with developmental disabilities. What is specific in the reviewed case studies within the educational function is that the focus of the family in the early childhood is on the child with developmental disabilities, which noticeably changes as the parents focus on the gifted child and his success in later schooling, especially in the higher grades.

### **Study limitations**

Publications and research on “dually exceptional” families are hard to find in national as well as international literature, although such families face dual challenges. In the research of professional and scientific literature and sources, a problem with terminology related to such specific families was noticed, i.e. no adequate expression was established. “Twice exceptional” or “different” [3, 4] is a term that refers to children who are gifted and have some kind of learning difficulty, developmental or physical disabilities, but this term is not used in the context of the family. There are numerous studies on families with gifted children, as well as on families of children with disabilities, but not on families where there are both gifted and children with developmental disabilities. Insufficient number or availability of publications on this research topic, as well as terminological doubts about families that are dually exceptional and different are facts that present limitations of this study. Small specimen is another limiting factor, however due to the fact that this is the first such paper in the region; results obtained can be a valuable guideline for conducting and implementation of further research. It would be interesting to examine relationships within such specific families, sibling relationships, as well as division of roles and duties within families.

### **Conclusion and pedagogical implication**

In this paper, presented are two families that are dually exceptional, that have one gifted and one child with developmental disabilities. The aim of the research was to notice the specifics of dually exceptional families, to find out what difficulties and challenges they face, as well as how they manage to respond to very specific and completely different needs for support in their children's education. Reproductive function is a field where a lot could be done but it is too late for these families. There is a fear of trying to expand the

family due to exhaustion from additional engagement, but also the issue of caring for the offspring that requires additional engagement (in any direction). If there was a systemic solution for these children who are on the margins (neglected by society and the state), it would certainly be easier for parents to decide on more offspring. Economic and educational function are fields in which systemic solutions would also be important and the family would be somewhat relieved of the concern for children who achieve their potential (in one direction or another) by increased material investment in relation to the regular system. Through additional education, workshops, courses and books the emotional and leisure function could also strengthen capacities of parents, as well as their parental capacities. Also, a break for the family from everyday obligations and activities (for children to attend camps, spend quality and professional time with someone) would rest tired parents and strengthen the quality of mutual relations. The protective function of the family, i.e. being an advocate for one's child, would facilitate good cross-sectoral or trans-sectoral cooperation of the social system that includes the educational, social and health sectors in order to realize all the rights of every child and provide protection in different sectors.

The parents of the gifted child state that the child is independent in activities, learning at home, that he was offered some programs and activities of his choice, stating that they have more "work" around the child with developmental disabilities. Such a conclusion supports the statement in the literature that the choice of special programs for children with disabilities is much narrower than for children who are gifted [12], and that families of gifted children face the problem of whether to include the gifted child in a program.

The notion of freedom, justice and the pursuit of happiness is a dead letter if gifted education is available only to individuals whose parents can afford it [29, 30]. It is the responsibility of the state and program creators to make gifted education programs available as well as to help children with disabilities and their families free of charge. Otherwise, such families are torn apart, without the possibility to enable their children to develop their full potential.

## References

1. Velišek-Braško O. *Inkluzivna pedagogija* [Inclusive pedagogy]. Novi Sad: Graphic i OPEP, 2015.
2. Velišek-Braško O. & Svilar M. Biti brat ili sestra „drugačijim“ osobama [Being a brother or sister to "different" people]. In: *Krugovi detinjstva*, 2017, 1. pp. 28-38.
3. Stenberg R. J. Giftedness as developing expertise. In K. A. Heler, F. J. Mönks, R. J. Stenberg, & R. F. Subotnik (Eds.), *International handbook of giftedness and talent*, 2000, (pp. 55–66). Oxford: Elsevier
4. Altaras A. *Darovitost i podbacivanje* [Giftedness and failure]. Beograd: Mali Nemo, Institut za psihologiju i društvo psihologa Srbije, 2006.
5. Ferberžer I. *Darovitost* [Giftedness]. Vršac: Viša škola za obrazovanje vaspitača, 2002.
6. Foley-Nicpon M., Allmon A., Sieck B. & Stinson R. D. Empirical investigation of twice-exceptionality: Where have we been and where are we going? In: *Gifted Child Quarterly*, 2010, 55, pp.3-17. Disponibil: <https://doi.org/10.1177/0016986210382575>
7. Kaya F., Stough L. & Juntune J. The effect of poverty on the verbal scores of gifted students, In: *Educational Studies*, 2016, Disponibil: <https://doi.org/10.1080/03055698.2016.1148585>
8. Moon S. M., Jurich J. A., & Feldhusen J. F. Families of gifted children: Cradles of development. In: R. C. Friedman & K. B. Rogers (Eds.), *Talent in context: Historical and social perspectives on giftedness*, 1998, (pp. 81–99). American Psychological Association.
9. Olszewski-Kubilius P. Optimal parenting and family environments for talent development. In: M. Neihart, S. I. Pfeiffer, & T. L. Cross (Eds.), *The social and emotional development of gifted children: What do we know?*, 2016, (pp. 205–215). Prufrock Press Inc.

10. Orsmond G. & Fulford D. Adult Siblings Who Have a Brother or Sister with Autism: Between-Family and Within-Family Variations in Sibling Relationships. In: *Journal of Autism and Developmental Disorders*, 2018, Volume 48, Issue 12, pp. 4090 - 4102(13). Disponibil: <https://doi.org/10.1007/s10803-018-3669-8>
11. Park S., Foley-Nicpon M., Choate A. & Bolenbaugh M. „Nothing Fits Exactly”: Experiences of Asian American Parents of Twice-Exceptional Children. In: *Gifted Child Quarterly*, 2018, Volume: 62 issue: 3, pp. 306-319. Disponibil: <https://doi.org/10.1177/0016986218758442>
12. Reichenberg A. & Landau E. Families of Gifted Children. In: L.V. Shavinina (ed.), *International Handbook on Giftedness*, 2009, Disponibil: [https://doi.org/10.1007/978-1-4020-6162-2\\_43](https://doi.org/10.1007/978-1-4020-6162-2_43)
13. Renzulli J. S. The three-ring conception of giftedness: Its implications for understanding nature of innovation. In: L. V. Shavinina (Ed.), *The international handbook on innovation*, 2003, (pp. 79–96). Amsterdam: Elsevier Science Ltd.
14. Bogosavljević R. & Beljanski M. *Školska pedagogija* [School pedagogy]. Sombor: Pedagoški fakultet, 2018.
15. Altun F., Yazici H. Perfectionism, School Motivation, Learning Styles and Academic Achievement of Gifted and Non-Gifted Students. In: *Croatian Journal of Education*, 2014, Vol.16; No.4, pp: 1031-1054. Disponibil: <https://doi.org/10.15516/cje.v16i4.559>
16. Zeidner M. & Mattheew G. Emotional intelligence in gifted students. In: *Gifted Education International*, 2017, Vol. 33(2) pp. 163–182. Disponibil: <https://doi.org/10.1177/0261429417708879>
17. Ben-Artzey Schieber N. The gifted child as an equal partner or minority in the sibling relationship: The parents' perspective. In: *Child Indicators Research*, 2019, 12(6), 2151-2171. Disponibil: <https://doi.org/10.1007/s12187-019-09632-8>
18. Bagdy E., Kövi ZS. & Mimosz ZS. *A tehetség kibontakozása* [The development of talent]. Budapest: Helikon, 2014.
19. Subotnik R.F., Olszewski-Kubilius P. & Worrell F.C. Rethinking giftedness and gifted education: a proposed direction forward based on psychological science. In: *Psychological Science in the Public Interest*, 2011, 12, pp. 3–54.
20. Worrell F., Subotnik R., Olszewski-Kubilius P. & Dixon D. *Gifted Students*. Annual Review of Psychology, 2019, 70, pp.551-576, Disponibil: <https://doi.org/10.1146/annurev-psych-010418-102846>
21. Winner E. *Darovita djeca: mitovi i stvarnost* [Gifted children: myths and realities]. Lekenik: Ostvarenje, 2005.
22. Velišek-Braško O. & Beljanski M. Uloga roditelja u procesu učenja u inkluzivnom obrazovanju [The role of parents in the learning process in inclusive education], In: *Razvojne karakteristike deteta predškolskog uzrasta* [Developmental characteristics of a preschool child], 2013, Zbornik radova. Novi Sad: Naučni skup sa međunarodnim učešem, Visoka škola strukovnih studija za obrazovanje vaspitača i Fakultet za sport i turizam, Novi Sad, pp. 9-18.
23. Zaidman-Zait A., Yechezkiely M. & Regev D. The quality of the relationship between typically developing children and their siblings with and without intellectual disability: Insights from children's drawings. In: *Research in Developmental Disabilities*. 96, 2020, Disponibil: <https://doi.org/10.1016/j.ridd.2019.103537>
24. Wu E. Parental Influence on Children's Talent Development: A Case Study With Three Chinese American Families. In: *Journal for the Education of the Gifted* Vol. 32, No. 1, 2016, pp. 100–129.
25. Velišek-Braško O. & Svilar M. Dvostruko posebni u inkuziji [Double special in inclusion]. *Darovitost – potrebe 21. veka*. Tematski zbornik radova međunarodnog značaja, 2019, Kruševac: Mensa, pp 85-91.
26. Tamásné M. *Korai fejlesztés, korai intervenció tapasztalatai* [Experiences of early development, early intervention]. Pécs: Apáczai Nevelési és Általános Művelődési Központ, Egységi Pedagógiai Szakszolgálat., 2009.
27. Besnoy K. D., Swoszowski N. C., Newman J. L., Floyd A., Jones P. & Byme C. The advocacy experiences of parents of elementary age, twice-exceptional children. In: *Gifted Child Quarterly*, 2015, 59, 108-123. Disponibil: <https://doi.org/10.1177/0016986215569275>
28. David H. A. Double Label: Learning Disabilities and Emotional Problems among Gifted Children. In: *International Letters of Social and Humanistic Sciences*. 2017, Vol. 75, pp 22-31. Disponibil: [doi:10.18052/www.scipress.com/ILSHS.75.22](https://doi.org/10.18052/www.scipress.com/ILSHS.75.22)
29. Creswell W.J. *Qualitative inquiry & research desing: choosing among five approaches*. London: Sage, 2007.
30. Davis G., & Rimm S. *Education of the gifted and talented* (5th ed.), 2004, Boston: Pearson Education. Disponibil: <https://doi.org/10.1037/10297-005>

[https://doi.org/10.52326/jss.utm.2021.4\(2\).02](https://doi.org/10.52326/jss.utm.2021.4(2).02)  
UDC 343.5(662.6)



## UNHOLY PRACTICES AMONG YOUTHS IN NIGERIA: VENOMS BREEDING TO A DISJOINTED SOCIETY

Babatope Matthew Ajiboye\*, ORCID: 0000-0002-7992-3099

*Department of Peace and Conflict Studies, Federal University Oye-Ekiti, Nigeria*

*\*babatope.ajiboye@fuoye.edu.ng*

Received: 02.22.2021

Accepted: 04.05.2021

**Abstract.** Before the year 1990 and up to the late 1990s, Nigeria was ravaged by what was known then as “Advanced Free Fraud” christened (419) and “Trades of Narcotic Drugs”. After more than two decades, a new set of unholy practices have found its way into the fabric of the society and have consistently proven to be worse than the duo of “419” and “trades of narcotic drugs”. This set of practices though not narrowed to the youths but majorly driven and made to flourish by the attendant number of youths who are in haste not only to make a living but flamboyant, thriftless and profligate lives detrimental to norms, values and society itself. Premised on the danger they herald for the society, the paper appraised the numerous unholy practices rampant among youths in Nigeria and their impacts on the society. Exploratory method was made use of; secondary source was employed and inferences were drawn via qualitative analysis. Findings revealed that exponential decadence among youths is directly proportional to the culture of prostitution, regime of internet fraud (yahoo-yahoo), kidnapping for ransom, social revolution of gambling etcetera. The paper concludes that unholy practices among youths have constituted a nuisance in no small measure to the society. The paper however advocates that the government at all levels should up their game in training youths in the vocation that would make them engage and reduce the surge in such practices in the society.

**Keywords:** *scheming, heartbeat, streamliner, plagues, rattle, exponential, nation.*

**Rezumat.** Înainte de anul 1990 și până la sfârșitul anilor 1990, Nigeria a fost devastată de ceea ce era cunoscut atunci ca „Fraude gratuite avansate” botezate (419) și „Comerțul cu stupefiante”. După mai bine de două decenii, un nou set de practici nefaste și-au găsit drumul în structura societății și s-au dovedit în mod constant a fi mai rele decât duo-ul „419” și „meserii de stupefiante”. Acest set de practici, deși nu este restrâns la tineri, este condus în mare măsură și făcut să înflorească de către numărul mare al tinerilor care se grăbesc nu numai să-și câștige existența, ci și să trăiască lipsit de griji, de economii, în detrimentul normelor, valorilor și societății în sine. Premisă cu privire la pericolul pe care îl anunță pentru societate, articolul a evaluat numeroasele practici nesfârșite în rândul tinerilor din Nigeria și impactul acestora asupra societății. S-a folosit metoda exploratorie; a fost utilizată o sursă secundară, iar inferențele au fost analizate prin metode calitative. Rezultatele au arătat, că decadența exponențială în rândul tinerilor este direct

proporțională subculturii prostituției, regimului fraudelor pe internet (yahoo-yahoo), răpiri pentru răscumpărare, revoluția socială a jocurilor de noroc etc. Lucrearea concluzionează, că practicile nefaste în rândul tinerilor au constituit o pierdere pentru societate. Cu toate acestea, lucrarea susține că guvernul de la toate nivelurile ar trebui să-și susțină politica în formarea tinerilor prin vocația care i-ar face să se angajeze și să reducă aceste practici nefaste pentru societate.

**Cuvinte cheie:** *schemă, bățai ale inimii, raționalizator, ciume, zgomot, exponențial, națiune.*

### Introduction

There is no downplaying the fact that youths are the cerebral core of any nation. No wonder, serious nations prefer to model their lots around them. This confirms the saying that if youths are involved in scheming of things in a society, her future is more than assured. It is not only because they are the future, but that they are the life cord connecting or bridging the ageing and the infants in the society. The same goes with the argument that they are the protective belt conserving the past and dictating the future of any nation. According to the Nigeria Second National Youth Policy, youths are considered the valued possession of any nation or region, without them, there can be no future because they are the center of reconstruction and development [1]. This point to the more reason generally they are addressed as the “future leaders”.

However, with a slight shift in conception, they are not only the future but the today of nations. This assertion is predicated on the revolution and changes that have taken place in many countries whereby youths not only play important roles in the social, cultural and economic landscape of such nations but also made to dominate and shape their political decisions. However, as virile as youths could be for any nation, they could also be so terrifying if not properly managed or utilized in a manner that can contribute to the strides and development of the nation. “Youths” are considered as the heartbeat of any nation. Any serious government that wants to succeed must take youth development very seriously. Any nation without youth development would be heading for a disaster; if properly managed can be very useful and if not can be disastrous. They are also the greatest asset any meaningful nation can boast of [2].

Rendering account of how the youth have been disillusioned and incapacitated the system, the former Vice-Chancellor of Adekunle Ajasin University, Akungba-Akoko, Professor Femi Mimiko, in an interview with the Punch Newspaper, maintained that “youth unemployment is about 40 percent... You have an army of citizens that is completely disoriented, frustrated, and angry, expressing their outrage in terrorism, kidnapping, ‘Yahoo-Yahoo’, and all manners of brigandage. Ours is the textbook definition of state capture, where tiny governing elite runs the system in its interest and for its good [3]. It is a fact that a sizeable population of Nigerians is made up of youth. In the words of Price, males and females in the age range of 15 to 34 are estimated to constitute more than one-third of the Nigerian population. He stated further that, these youth make up the largest proportion of people in Nigeria, with a gender distribution of 51.6% female and 48.4% male [4].

Going by these statistics, the core part of the society (youth) are expected to be in the forefront or driving seat, piloting the socio-economic, political, cultural and other spheres of human endeavours. Be that as it may, in Nigeria today, this narrative is not meant to be. All the same, and with the foreknowledge that the nation is run milk-dry by few at the expense of over 180 million others which are significantly constituted by youths

destined for no direction in a straightjacket manner society, little would one wonder in the huge number embracing unholy practices. Amazingly in recent times, there have been exponential increase in both the number of unholy practices and youths compare to the relatively low number who are engaged in decent jobs or vocations. That is, the number of youths engaging in enterprises that are considered amoral to the human dignity and the society is unprecedented.

Going by the unmatched figure of youths actively involved in sharp practices, the country's name has not only been tarnished but her identity further enmeshed among the comity of nations. The dysfunctional in the system is exemplified in the glaring fact starring us in the face that an innocent Nigerian embarking on an adventure elsewhere in the world is categorized as a potential suspect of these antisocial practices. In the light of the disservice it has done to the country's identity amidst nations, and having reached a point that it practically becomes the newest youth-plagues spreading like Harmattan bush fire the country is now engulfed and battered with, the paper seeks among other things to discuss some of the unholy practices prevalent among youths in Nigeria that in turn makes her a disjointed society. Nevertheless, useful recommendations capable of stemming the tide were advocated.

### **Objectives of the Study**

The broad objectives of the study are:

To clarify the concepts 'youth', 'unholy practices', and 'society'

To examine some of the unholy practices prevalent among youth in Nigeria

To advocate feasible measures that can stem the flow of unholy practices in Nigeria.

### **Methodology**

The methodology used was exploratory analytical technique; secondary source was adopted for data collection. This was done through library sources, books, journals, magazines, conference papers and other works applicable to the study. Internet sources were also found helpful for the inquiry. The gathered data were critically and thoroughly analyzed which ensured an objective conclusion.

### **Significance of the study**

The inquiry focused on the unholy practices among youth in Nigeria which invariably has for ages been responsible for many of the anomalies and malfunction in the system, and has assumed a worrisome dimension requiring all hands to be on deck for control and its possible curtailment. And as a response to the worries as expressed from various quarters, the inquiry came up with possible steps meant to address the problem. Therefore, it will be of immense value to the body of existing knowledge most especially in fields like criminology, sociology, peace and conflict studies, security and developmental studies. Again, the inquiry will also be practically handy to policymakers, stakeholders, researchers, scholars and students who are anxious about how to not only stem the flow but to nick in the bud the unholy practices among youth in the society.

### **Scope of Study**

It is inferable via the topic that the study primarily captured the unholy practices among youth in Nigeria and the peril it portends for the system. Given this, the work applies only to the Nigerian clime and not universal. Similarly, the study covered the period of late 1990s when multiplex and new set of sharp practices started crippling into the Nigerian society till date.

## **Concepts Clarification**

### **Youth**

Universally, the concept 'youth' is one of the widely discussed concepts in the field of humanity and social science. Lately, fields like peace and conflict studies, sociology, demography and social statistics plus other social science field have had controversial submission of the concept. A multidisciplinary concept with multidimensional grasping and connotation that not only depends on the individuals doing its interpretation but its narratives largely rest on the perspective and discipline it is being reviewed. It is this complexity avouched in the concept that makes it not ascribable with precise definition or meaning. According to Amzat & Ali, "such difficulty stems from the fact that the concept has political, sociological, legal, gerontological, demographical and even theoretical dimensions [5].

Recognizing the differential and relativity enshrouded in the concept, the United Nations UN gave two distinct definitions as thus; youth as a period of transition from the dependence of childhood to adulthood's independence and youth as those persons between the ages of 15 and 24 years [6]. Looking at the latter conception, it could be argued that it does not capture a universal sense of the term because there is no homogeneity in youth. In other words, the age bracket varies from culture to culture and also depends on a variety of factors like political, socio-economic and geographical locations. The African Youths Report AYR 2009 organized by United Nations Economic Commission for Africa UNECA defined "youths" as people between 15 and 39 years of age [7].

It is a fact that youth notion is usually defined differently by many countries. For instance, countries in Africa such as Ghana, South Africa and Tanzania see their youth as those between 15 and 35 years of age; Botswana defined hers as persons between 15 and 25 years of age; Nigeria defined it as those between 18 and 30 years of age. In this sense, every country's guess about the notion youth becomes good as another in so far it is considered as a 'social group' of people who doesn't enjoy the parental care like children but rather take responsibility for whatever they decide to go with. With the cognizance of the general definition of youth been evasive and difficult to come by, its unique attributes and traits are expatiated as thus, greater physical strength, greater knowledge acquisition propensity, faster rate of learning, faster reaction time, innovative proneness, love for adventure and preference for boldness, minimal risk aversion, less fear of failure, less conservation and others [2].

### **Unholy**

Before a comprehensive exposition of the term "unholy practice(s)", it will be apposite and levelheaded to first clarify the adjective "unholy". Unholy could be interpreted as meaning the following; an expression of disapproval, displeasing or unpleasant of something or about conduct of somebody; having to do with committed cruel acts; exhibition of abhor and dishonest dispositions. Other synonymous words interchangeable of unholy are impious, atrocious, dreadful, profane, cruelty, outrageous, unhallowed, immoral, base, unconsecrated etcetera.

### **Unholy Practices**

In the context of the social order, they are acts and actions that are morally abnegated, censured and typically regarded as anti-social deeds. In other words, traits exhibition which is not only severely detrimental to workings and functionalism of society

but also portends exact capsize or counterclockwise of norms, values and virtues cherished in a societal setup. Unfortunately, Nigeria represents fairly of a fertile ground where varieties of religion are made to flourish profoundly. Despite the multiplex of religion in the nation, unholy and sharp practices most especially among the youths continue to flourish at a disturbing and alarming speed. Hence, an illustration which nothing could be fitter than is that of a resemblance of a 'dilemmatic society'. The dilemma stems from the fact that the nation is overstressed with different denominations of worship centers which in a way a commensurate with the number of unholy practices panning out lately.

Ordinarily, with the religious activities dominating the nation as if it is the country's gross domestic product (GDP), one would have expected that by now the nation should have become holier than Jerusalem. Unfortunately, the opposite is the scenario because worldliness and materialism remains the driver and conductor of many Churches left alone the congregations. An indicator of this is that when one critically examines the lives of bigwigs in the religious circle, one is left with no alternative than to marvel with the traits oozing out which symbolizes that of worldly life. It is however not unfathomable that religious institution is a tunnel that eases the smooth passage and encourages the meteoric rise of unholy practices among youths. This assertion hinges on the reality that fraudsters, men of the underworld and questionable character are openly showered encomium like saints especially when they donate handsomely from their proceeds to evangelism.

The misplaced priority by religion is an attendant fact that its main objective has been defeated long ago. Therefore, it becomes a matter of ends and not the means for churches in celebrating the successful members of congregation. As crucial, sensitive and decisive as religion is to societal wellbeing, it is horrendous that the same streamliner of society has abetted unholy practices in eating deep into the fabric of society like a venom strike from typical America's super rattlesnake penetrating its way through the body of a delicious prey. Be that as it may, the implication of the massive number of youths engaging in these counterproductive ventures is that a sizeable number of destinies are permanently destroyed; the society rub off the peace as it were in the past and turned "state of nature" which is brutish, nasty and short in the words of Thomas Hobbes.

### **Society**

The term society refers to the human configuration and system of interrelationship that brings everyone together thereby becoming an indivisible entity, unit or an organization. It could also mean the totality of human interaction, thoughts, feelings, norms and values shared under a single umbrella (society) that connects us. The idea of a society developed from the actuality that human beings are set apart from other animals by being social, able to reason, internally integrate and live together within a given territory which thus invariably defeats all individualistic tendencies. A society is a self-sufficient, self-perpetuating, and internally autonomous system of social relations. Such a system distinguishes a population occupying a specific territory; but as a system of social relations, the society is distinct from territory or population. The society is the structure of relations through which the population of members is internally organized as joint occupants of a given area [8].

### **Theoretical Framework**

Establishing a justification and theoretical base for unholy practices among youth, the study adopted Social disorganization theory. The theory is germane to the study



because the crux, underlining idea and myth clouding unholy practices among youths and other related anomalies perpetrated by them is fittingly embedded, captured with precision and comprehensively explained within the realm of the theory.

### **Social Disorganization Theory**

The theory of social disorganization emanates through the works of sociologists Robert Park and Earnest Burgess in the early 1900s at the University of Chicago. They were preoccupied with the explanation of criminality and other social problems that existed in the cities about the social and environmental factors. However, the theory was further thickened, broadened and given a facelift which ever made its application possible to more social problems and not limited to the purview of crime by a duo of Chicago scholars; Clifford Shaw and Henry McKay (1942) who helped to popularize the social disorganization approach to delinquency. They began their research in Chicago during the 1920s, when the city was full of newcomers and foreign-born immigrants. Most of the newcomers congregated in the central city area, occupying old, deteriorated housing with many health and environmental hazards. Shaw and McKay scientifically studied crime within this changing urban environment [9].

To understand a socially disorganized society, some primary dynamics ought to exist within such milieu. This includes high rates of residential turnover, a heterogeneous population, a high level of moral decadence and a high level of defiant to constituted law. Cullen and Agnew put it in a clearer perspective by opining that to understand the crime causation in a better perspective is not to study individuals within a system but rather to lay emphasis on the whole society itself [10]. However, Cloward and Ohlin enthused that studies in the United States, England and elsewhere have shown that there exist strong correlations between high crime rates and such social disorganization factors as alienation, poverty, disorder, broken homes, and unemployment [9].

Substantiating this view, Igbo noted that “social disorganization refers to a breakdown in normal and habitual way of life. It is associated with the breakdown of conventional norms and values as a result of industrialization, globalization and urbanization of Nigeria as a nation [11]. The societal disorganization occasioned by these dynamics have had a far arching consequence on the Nigerian cultural value in no small measure, by displacing the much cherished and revered indigenous communal living and substituting it with alien culture that is embedded with sophisticated misdemeanour delinquent behaviours and unholy practices which have arguably become routine among youths in the country. It is rather not platonic but empirically visible that unholy practices such as prostitution, internet fraud (yahoo-yahoo), kidnapping, gambling, amongst others, are prevalent among youths. Having done some of these practices for long, they have been able to discern that there lays a great lucrative and life-insured escapade for them.

### **Examination of Unholy Practices among Youths in Nigeria**

It is a general verdict that the youths constitute the largest percentage of the Nigeria population, most especially when it is divided into the active and less active contributors to the Gross Domestic Products (GDP). The same could be said when it comes to examining the class of people who are actively involved in cultivation, propagation and promotion of myriads of unholy practices, diminishing values and distorting culture in the country. Although, the idea of having youth as dominant or centerpiece of the population of the country is not in any case a natural indicator of minus or negativity on the socio-economic,

cultural lifestyle and other important sectors in the country. Rather, it makes every sector buoyant and rock-solid because of their potent and agile nature.

However, the argument is that whenever such a huge number (youths) which ordinarily supposed to be an aplomb for sustainability and development is left unchartered in such a way that it could positively imprint on the nation, then, the neglect, unutilized and involuntariness of such a humongous number will ultimately comes back to haunt the nation perilously. The arbitrariness or uncontrolled youth has been and of course, is the manure which is regularly nurturing and multiplying unholy practices amidst youths in Nigeria.

### **Culture of Prostitution**

The simplest, modest and most enduring definition of prostitution is the view that “prostitution stems out from a manner of lending (for money or other purposes) of one’s body to other persons so that they can satisfy their sexual needs [12].

Whenever the phrase “prostitution” or “harlot” gets mentioned, the ensuing bell that rings in the ear is usually succeeded by the trademark “the world’s oldest profession”. An eyebrow may be raised as to what makes it universally qualified as the oldest profession without an attraction of quantum contradiction. However, such a puzzle as regards the truism of the assertion is readily dispelled going by the biblical affirmation of prostitution as the oldest profession ever practiced in the ancient world. This ground was thickened by the situation of ancient Israel as the commonplace of prostitution. The popular illustration that recurrently comes to reckoning is that of Judah and Tamar accounted in Genesis 38:14-26. In that period, prostitutes would wait at the side of highways for travelers or passersby who normally engaged them in sex, and after the sexual encounter with the prostitutes, they are obliged to exchange them with kid goat or in the absence of a valuable which was a measure of transaction in those days and only the rich could afford them.

The acknowledgment by the bible as the very first profession becomes the justification of the practice for some people who have never for once questioned its sanctity or morality, little would one then wonder about the encouragement and promotion given by these amoral individuals in the society to the youths who are hell-bent on eking out a livelihood from the unethical practice of prostitution. As a result of this biblical pedestal, inferences have been drawn as arguments and grounds by some people towards establishing the legality and licensing of prostitution in many societies. But again the biblical credence does not in any way establish the legality, sanctity and of course, the nobleness of the first-ever vocation practiced on the surface of the earth. It could be argued that the recognition of the profession by the bible has further established the phenomenon as one of the fewer regular contradictions that exist between the holy book and the modern culture or society. This is unconnected with the fact that every discussion on the phenomenon makes the bible a fertile basis or precedence for future reference.

However, turning attention away from the biblical perspective and approaching issues with what is obtainable and acceptable to the typical African cultural society of which Nigerian society belongs, there is no gainsaying that prostitution is not a culturally specific phenomenon. In essence, it is a global issue that affects every culture. Even as ubiquitous and prevailing as it may appears to be, major African cultures Nigeria inclusive disapproved, frown and speaks ill of the practice of prostitution in no small volume. In African countries including Nigeria, where many cultures speak against sex work, the

presence of a large number of commercial sex workers have now become a major social issue [13]. The indulgence of youths in this antisocial, deviant and unholy practice unarguably pits it against the culture or society. "Prostitutes have a separate subculture with norms and values that are directly opposed to that of the larger society to the extent that they often run foul of the laws of the society [14].

Though a major contravention of deviance to the laws of the society, which may have been occasioned and given rise to as a result of the prevalent moral decadence, economic hardship, high poverty condition and the push for money so as to meet up with the existential demands in the society. "Prostitution is based on the economic exchange of relationships between the prostitute and the customer, one participating for pleasure and the other for money [14]. In essence, it was a trade-only reserved for the downtrodden and members of the lower class of the society who could not have been able to make ends meet without engaging in sex in exchange for money. However, one which was not very rampant until lately in the society is the surge of the phenomenon or the occupation of prostitution among able, educated and sophisticated youths in the Nigerian society.

The festering and upsurge in the practice has seen so many youths become professionals in the unholy act of prostitution. Some of the notable groups under which they are identified are:

- Escort workers: This particular group of prostitutes is very expensive due to the home service they render. Their contacts are given to clients through hotel staff serving as intermediaries or facilitators between them.
- Students Class (Aristos): They are found virtually in every higher institution of learning, sometimes their clients could include lecturers with whom they exchange sex for marks, and they on many occasion fantasized with politicians and wealthy people in the society.
- Beach Boys (gigolos): This particular group is made up of young and active boys who like "aristos" get paid for sexual service rendered to "sugar mummies".
- Call Girls: This group is independently classified and sophisticated prostitutes who make use of social media and print media outlets in advertising their products and services for customers to patronize.

### **Epidemic of Internet Fraud (yahoo-yahoo)**

The striking conception that birthed and eventually produced the invention of information and communication technology (ICT) was a well thought out one which conceived the world where economy strengthened, social revolution promoted, new political ideology introduced, technological inclined human beings are given a facelift and are driven by technology projected towards actualizing maximum transformation, increased output and development across boards. "The introduction of new technology into the business or commercial arena often offers the promise of a better world, thereby challenging, in the process, our imagination and enhancing human expectations. In this sense, the internet revolution was construed to be an era that would usher in an unprecedented social transformation: new economy, new politics, new world order, indeed a new and advanced species of human beings whose personalities will be dependent on the computer and whose expertise would be transported across the borders of space and time by the power of the internet [15].

From the basic disposition that the internet will be helpful, rewarding and ensuring development across boards, there has been a slight shift from this focus in Nigeria. It has been made to be understood that the internet represents something of a double edged sword which is both developmental and detrimental to the subscriber of it. The ticklish youths have since turned the idea to a detrimental avenue where fraud can be perpetrated. That is the initiative has since been reconstructed, reconfigured and channeled to accommodate their incriminating or negative penchant for eking out ends meet through transactions which are targeted at swindling the unsuspecting foreigners off their valuables and money. This scenario was exemplified in the expressions which have clearly shown that the relationship between technology and society has proved not to be metaphysical but quite materialistic instead [15]. It is worth stressing that a sizeable number of youths who see the internet as a soft landing for practicing fraudulent activities have taken their fraudulent enterprise by storm and far, they now go as far as engaging in diabolical means of enchanting the unsuspecting clientele with shams (juju) to depose them of their valuables.

The upsurge of yahoo-yahoo among youths has led to tainted in the identity of Nigerians most especially the ones living abroad as the country is however seen and given the toga of the most fraudulent and crime-friendly nation in the world. The index was arrived at as a result of the huge number of imposters' activities showing on the cyberspace. Nigeria has been fashioned as the origin of the most fraudulent spam mails appearing in the cyberspace [16]. Though it could be said that fraud and sharp practices have been in existence for a long period in the country, but the accessibility made possible through the internet for fraudsters to reach out to a great number of clients has been given a big boost even without their identity shown. The indulgence in the yahoo-yahoo act has reached a worrying dimension considering the percentage of youths engaging in the dastard venture. Lately, it has become a haven for graduates who could not secure job upon graduation, due to this dire situation they faced they are easily tricked and recruited into the atrocious enterprise. The worst of it all is the initiation of both undergraduates and the secondary students into the disdain vocation.

### **Kidnapping for Obtaining Ransom**

Kidnapping, a typical unholy practice is fast becoming a deeper problem by the day for the country, as the phenomenon is a matter of existent rather than platonic act massively cultured by the youths in the society. Consequently, the high-level concentration among the youths has become a source and subject of concern for everyone in the Nigerian society. Coining out a suitable explanation for the phenomenon may however not be straight-jacketed or an easy task because as problematic as the phenomenon is to the society, so also an all-encompassing definition becomes to the definer because it is dimensional and opinionated based. Upholding this view, Ottuh & Aitufe illustrated that defining kidnapping is problematic... The word poses many definitional problems about a country's legal and moral viewpoints as well as the availability of other variances such as hostage-taking, hijacking, abduction etcetera [17]. Kidnapping varies from country to country [18].

Therefore, explaining it within the Nigerian context becomes imperative because no philosopher can philosophize beyond his or her immediate milieu. This definition practically becomes handy in this respect. Kidnapping can be seen as false imprisonment in the sense

that it involves the illegal confinement of individuals against his or her own will by another individual in such a way as to violate the confined individual's right to be free from the restraint of movement [19]. Shifting the searchlight from the definition and sway the direction of causes of kidnapping, it could be argued that there are diverse causes for kidnapping especially when the phenomenon is expanded or viewed under a wide scope. The causes could include proliferation of small and light weapons, poverty, youth unemployment, materialism and loss of societal values. However, when the causal connection is narrowed down to the youth's involvement in the business, one is left with no causation than youth unemployment and an urge for materialism. It is in the respect of this that Odoh expertly observed that, underlying these acts of callousness (kidnapping) is the fact that the youths are idle and live in a society where a man's worth or importance is measured by his material possession [20].

Going by Odoh's statement "a man's worth or importance is measured by his material possession". Little would one then be taken aback by the volume of social revolution by the youths most significantly the unemployed individuals who have found the unholy practice of kidnapping to be a soft landing enterprise to better their economic situation. It is essential to note that the negative thoughts of youths making quick cash via kidnapping did not occur spontaneously, rather it evolved, got redefined and eventually face-lifted as a result of being unemployed of many smart, intelligent and strategic thinking graduates who have since remained technocrats in the unholy practice. It is however glaring in the face that kidnapping is rampant among youths in the country as it is considered a very lucrative business capable of sustaining their existential needs. Yet, it has to be stressed that this kind of unholy practice does not only appear on the illegitimate side of the coin but very well abhor societal values, norms and parenthetically antithetical to the development of the society.

### **Social Revolution of Gambling**

The act of gambling refers to any practice that involves placing of bet on a game or its variance usually induced and driven by money purpose. "It is the staking of money on the outcome of games or events involving chance or skill. Similarly, it is seen as the wagering of money or other belongings on chance activities or events with random or uncertain outcomes [21]. Available records have shown that the phenomenon of gambling has long been in existence in the history of mankind. Tracing its first practice, Omanchi and Okpamen opined that, the earliest record of gambling appears in ancient Rome, recounting stories of peasants and emperors gambling with dice and huge gambling debts and the fights that broke out over them [22].

Before its introduction in Nigeria, it was considered an antisocial practice and was assiduously campaigned against and discouraged by the duo of Christianity and Islamic religions, because of the tendency to make people cut corners and amassed wealth through illegitimate means. Despite the forewarning coming from the religious movement, towards the tail end of the 20<sup>th</sup> Century, the Nigerian government via Chapter 22, section 236 of the Criminal Code Act endorsed the practice for income and tax drive purposes [23]. Worryingly, the unholy practice of gambling which has become a novel and chief social revolution among Nigerian youths nowadays has assumed larger than what the society could cope with. The meteoric rise and upsurge of gambling among youths in recent times which has been unprecedented in the country could be said to be directly proportional to the

attendant proliferation and path for youths to regularly indulge in gambling. Some of such paths are:

- **Lottery bet:** Bet for doling out rewards by chance or risk which could be by any of these forms; casting of dice, tickets, cards lots, numbers etcetera.
- **Casino:** A social establishment where gambling takes place like playing card games, snooker games, slot machines etcetera.
- **Gambling on animals:** This activity is often done by predicting animal race results and placing a stake in the outcome.
- **Draft game:** It is a board game for two players in which the players race their seeds from start to finish and the seeds are moved towards opposition territory, the first player to have his seeds exhausted automatically becomes the loser. Though a recreation and leisure game, but becomes gambling if and only if money is placed and risked as a wager by the players concerned.

Needless to say that in the time past, gambling was done clandestinely in the pool shops which were not as ubiquitous as the gambling outlets like bet9ja, nairabet, surebet247, goldenwinnersbet, merrybet, betking, betpawa, sportybet et-cetera that have become worship centers for the youths. The worst of it all is that most of these bet companies have devised easy means where it is made possible for youths to place bet and other transactions online through phones, tablets and other computer applications.

### **Conclusion**

Nigerian society suffers from high moral and ethical debauchery which stems out of unholy practices amidst youths. Practices like prostitution, kidnapping, internet fraud (yahoo-yahoo), gambling and others are venoms that have over and over again strike at the core of society thereby making societal cherished values, norms and morals eroded at an alarming speed. Besides, the country's name, image and identity have been tainted and given a bad outlook amidst the comity of nations, mediocrity celebrated at the expense of excellence and ingenuity made to play second fiddle to craftiness. It is also glaring in the face of everyone that with the saturation of these practices among youths-, there seems to be no heydays but rather a bleak future for the country in so far these practices continue to deepen in the Nigerian society.

### **Feasible Measures that can stem the Flow of Unholy Practices in Nigeria**

- It is flagrant there is a high level of morals and values distortion in the Nigerian society, the setback stems from the failure of institutions that are hypothetical to instilling morals in the young ones. A decisive stare at institutions like family, school, religion, Non-governmental organizations (NGOs) and National Orientation Agency (NOA) etcetera shows that all have failed in their respective capacities at ensuring a better society. Therefore, for Nigeria as a nation to regain its normal pedestal as expected of a sane society, all the mentioned institutions and more would have to embrace revamping or go back to the drawing board and play significant roles as per values integration and restoration of morals which remains vital in shaping the future of not only the youths but that of the entire society too.
- Government has to raise its bar and do more in creating employment and skill acquisition training for its teeming youth's population. The proposal became necessary because of the alarming percentage of the youths who are wanting when

it comes to engagement in productive ventures. By implication of this derisory condition, they are cheaply lured to practices like prostitution, kidnapping and 'yahoo-yahoo' which are detrimental to everyone in the society. To however deemphasize these practices, there has to be encouragement coming their way in form of job creation and vocational skills capable of taking care of their existential demand.

- Another approach that government has to take conscientious effort is in the direction of stern prosecution of people who have been investigated and found guilty of internet fraud (yahoo-yahoo) to serve as a deterrent to others contemplating the act. The government through the various agencies assigned to wage war against the scourge seems to be exhibiting a double standard approach. This is because many of the personnel of these agencies are found in the habit of collecting bribe from the fraudsters leaving out those who couldn't negotiate their way through to face judgment. Therefore, if the war against internet fraud would have to be won, then it has to be sincere prosecution whereby no one cares about whose ox is gored.
- Lastly, the monumental consequences of the gambling epidemic have been felt all over the nation. It has now reached a point where almost all and no one is left out of the practice. The alarming indulgence has seen a sizeable number of underage who should normally not engage in gambling do it on regular basis. This worry has partly been aided by the non-compliance and regulation by the National Lottery Commission as per guiding gambling. Based on the observation that there is no strict adherence to the law and dictate regulating gambling, it has become imperative for the government through the National Lottery Commission to come out with a more serious approach at abating the exponential increase in youths engaging in gambling.

### References

1. Second National Youth Policy Document of the Federal Republic of Nigeria Published by the Federal Republic of Nigeria, 2009.
2. Agbegbedia A. O. & Ejemez, C. I. Youth Development Policy: A Panacea for Managing Youth Violence in Nigeria *International Journal of Arts and Commerce*, 2019, Vol. 8, No.9, pp. 59-73.
3. Mimiko F. I once publicly criticized someone who introduced me as Gov Mimiko's brother Available on <https://punch.com/topics/interviews/life-times/> Retrieved May 23, 2020.
4. Price, R.A. Youth employment needs in Nigeria K4D Helpdesk Report 691. Brighton, UK: *Institute of Development Studies*, 2019.
5. Amzat J. & Ali A.A. Youth and Political Change in Nigeria: Historical Note and Critical Discourse *AFFRIKA: Journal of Political, Economics and Society*, 2016 Volume 6, Number 2, pp. 119-137.
6. UN 'World Youths Report- Young People's Transition to Adulthood: Progress and Challenges'; New York; UN, 2007.
7. UNECA African Youths Report: Expanding Opportunities for and with Young People in Africa. Addis Ababa: UNECA, 2009.
8. Smith M.G. Pluralism in Pre-colonial African Societies. In Kuper and Smith eds. *Pluralism in Africa, Berkeley and Los Angeles: University of California Press*, 1969 pp. 91-151.
9. Cloward R.A & Ohlin, L .E. Sociological Theories: Social-Structural Explanations for Criminal Behaviour Available on <http://www.ablongman.com/glickie> retrieved June 21, 2020.
10. Cullen, F.T & Agnew, R. *Criminological Theory: Past to Present*. New York, Oxford University Press, 2011.
11. Igbo E.U.M. *Introduction to Criminology* Nsukka: University of Nigeria Press, 2007.

12. Tiosavljevic D. Prostitution as a Psychiatric Situation: Ethical Aspects *Psychiatric Dambina*, 2016 Vol. 28, No. 4, pp. 349 -356.
13. Bagudo A.A.& Yusuf M.A. Addressing Prevalence of Prostitution in Nigeria Through Non-Formal Education Provisions *European Journal of Education and Development Psychology*, 2019 Vol.7, No.2, pp. 1-10.
14. Kangiwa A.G. The Socio-Economic Effects of Prostitution in Nigeria *European Journal of Research in Social Sciences*, 2015 Vol. 3, No. 5, pp. 70-83.
15. Jegede A. E. & Olowookere Cyber Risks and Fraud in the Nigeria's Business Environment: A Postmortem of Youth Crime *Journal of Social and Development Sciences*, 2014 Vol. 5, No. 4, pp. 258-265.
16. Abdulkabir, O.S. The Impulsive Upsurge of Yahoo-Yahoo in the 21<sup>st</sup> Century: Islamic Perspective African *Journal of Criminology and Justice Studies*, 2019 Vol. 12, No. 1, pp. 91-104
17. Ottuh P.O & Aitufe, V.O Kidnapping and Moral Society: An Ethno-Religious Evaluation of the Nigerian Experience. *European Scientific Journal*, 2014 Vol. 1, no. 14 pp.420-433.
18. Iyang J.D & Abraham, U.E "the Social Problem of Kidnapping and its Implications on the Socio-Economic Development of Nigeria: A Study of Uyo Metropolis". *Mediterranean Journal of Social Sciences*, 2013 Vol. 4 No 6.
19. Ngwama, J.C. Kidnapping in Nigeria: An Emerging Social Crime and the Implications for the Labour Market. *International Journal of Humanities and Social Science*, 2014 Vol. 4 No 1 pp. 133 – 145.
20. Odoh I. D. Kidnapping in Nigeria and its roots Causes, 2010 Available on <http://tncp.net/Articles/tabid/1800/articleType/Articleview/> retrieved September 27, 2020.
21. Bankole, E.T. Patterns and Prevalence of Gambling Behaviour among Youths in South-West Nigeria: A Case Study of Youths in Oyo and Ekiti State *British Journal of Psychology Research*, 2019 Vol. 7, No. 2, pp. 22-46.
22. Omanchi S.A. & Okpamen, K.O. The Changing Patterns of Gambling in Benue State: The Case of Emerging Role of ICT (Information and Communication Technology) in Contemporary Makurdi Metropolis *American Association for Science and Technology*, 2018 Volume 5, Issue 2, pp. 29-36.
23. Criminal Code Act, Laws of the Federation of Nigeria Government, 1990 Available on [http://www.commonlii.org/ng/legis/num\\_act/cca115/](http://www.commonlii.org/ng/legis/num_act/cca115/) retrieved 29<sup>th</sup> September, 2020.



[https://doi.org/10.52326/jss.utm.2021.4\(2\).03](https://doi.org/10.52326/jss.utm.2021.4(2).03)  
UDC 371.124:811.111



## ACQUIRING ESP TEACHER COMPETENCE THROUGH THEORY AND PRACTICE

Eleonora Olivia Bălănescu\*, ORCID ID: 0000-0002-8836-1331

University of Craiova, 13 A. I. Cuza St, Craiova, Romania

\*[olivia.balanescu@edu.ucv.ro](mailto:olivia.balanescu@edu.ucv.ro)

Received: 03.18.2021

Accepted: 04.22.2021

**Abstract.** The emergence of English for Specific Purposes (ESP), which is closely linked to particular professions, requires qualified language teachers. Despite the growing demand for courses in ESP in Romania, and the eagerness of universities and private institutions to include these courses in their curricula, insufficient attention has been given to teaching training in this domain. In the absence of under-graduate ESP teacher training programmes, ESP is taught by General English graduates who basically learn as they go. The aim of this paper is to map the territory, that is, to outline the main coordinates on which a framework of ESP teacher training can be developed in Romania. These coordinates refer to the particularities of teaching ESP and to the subsequent teaching practice. The research method consists in combining theoretical considerations with practical advice and suggestions for pre-service teachers.

**Key words:** *learner-centred approach, needs analysis, networking, teaching practice, training.*

**Rezumat.** Emergența limbii engleze pentru scopuri specifice (ESP), care este în strânsă legătură cu anumite profesii, necesită profesori de limbă calificați. În pofida cererii crescute de cursuri în domeniul ESP în România și a disponibilității din partea universităților și a instituțiilor private de a include aceste cursuri în aria lor curriculară, o insuficientă atenție a fost acordată pregătirii profesorilor în acest domeniu. În absența unor programe universitare, la nivel de licență, de pregătire a profesorilor de ESP, această materie este predată de către absolvenți de Engleză Generală care învață să predea „din mers”. Obiectivul acestei lucrări este de a cartografia teritoriul, adică de a contura principalele coordonate pe baza cărora s-ar putea dezvolta un curs de pregătire a profesorilor în domeniul ESP în România. Aceste coordonate se referă la particularitățile predării ESP și la practica pedagogică adiacentă. Metoda de cercetare constă în combinarea considerațiilor teoretice cu sfaturi și sugestii practice pentru viitorii profesori.

**Cuvinte cheie:** *abordare centrată pe student, analiza nevoilor de învățare, practică pedagogică, relaționare, training.*

## **Introduction**

The end of the communist regime in Romania marked the beginning of the nation's great political and cultural openness to the international world. People were free to travel, to communicate, to work and study abroad. At the same time, numerous foreign companies set up subsidiaries or started new businesses in the country, employing local workforce. As a result, there emerged a distinctive group of people who needed to communicate in English for very specific, job-related purposes. In the 1990s, the Romanian academic system was quick to react to these new learning needs and introduced courses of English for Specific Purposes (ESP) in their curricula. The education private sector also identified the 'gaps' on the market and, subsequently, private language schools began to offer English courses for Romanian employees in multinationals companies.

Since the demand for ESP courses has grown over the years, more and more teachers have been involved in teaching ESP. It is surprising that, in spite of the great demand and offer of ESP courses, most teachers are not adequately trained for teaching this branch of English, because there are not under-graduate ESP teacher-training programmes in Romania. Traditional language teaching has mainly focused on developing learners' linguistic competence, that is, their listening, speaking, reading and writing skills. English teachers are trained to do this job during their university studies in linguistics or literature. The experience that General English (GE) graduates can get during their methodology training course in university is often limited to teaching a few classes in secondary schools or high schools, as part of their teaching practice sessions under supervision, and thus, they are not adequately "equipped" with the skills required to face the difficulties one encounters when teaching English to Business or Engineer students in colleges. Many of them panic when they meet their first ESP class. In time, however, they get experience and have the possibility to develop their ESP competences by attending, as the author did, ESP teacher training courses organised by universities or the British Council Romania, or by registering for post-graduate programmes of continuous professional development and training.

The present paper argues for the necessity of creating systematic and effective ESP teacher training programmes in Romanian universities. We believe that these programmes will help pre-service teachers develop their ESP teacher competence which relies on field-specific language knowledge and ESP pedagogical skills. In what follows, we shall outline the two main coordinates of such a programme: theoretical knowledge required for teaching ESP and relevant teaching practice. Therefore, the first part will offer a review of the current issues in ESP instruction, emphasising the main aspects that make ESP teaching different from GE teaching, while the second part will approach the teaching practice stage, in terms of its organisation, objectives and outcome.

### **1. GE vs. ESP Teaching Training**

The famous saying "Tell me what you need English for and I will tell you the English that you need" can be considered the main guiding principle of ESP [1]. This has determined a more thorough study of the language and of the teaching methods, bringing about a new linguistic approach. Unlike students of GE, students of ESP have a clear goal for learning, and the courses should be designed based on an analysis of their learning needs. From this perspective, the purpose of learning English represents the most obvious difference between GE and ESP.

Another significant difference refers to the target discourse, which involves both the characteristics of the language that has to be taught and of the professional community in which the language will be used. Whereas a GE teacher is familiar with the target discourse because he/she has been trained in that discourse, the ESP teacher needs to impart field-specific language knowledge that may be largely unknown to him/her. Referring to Business English, Harmer points out that students need to study the kind of language that would enable them to operate in the world of English-medium commerce. They need to study specific vocabulary and language contexts which are less likely to occur in a GE course. Therefore, teachers should acquire specialist subject knowledge in order to “train classes in such procedures as the art of negotiating, the correct use of phone and e-mail, or the reading of business reports” [2].

Starting from the general assumptions about ESP made by Hutchinson and Waters [1 - 2], it should be stressed that:

a) ESP does not consist of teaching and learning “specialised varieties” of English. Although it is true that the sentence grammar of ESP tends to favour particular forms, such as the Present Tense Simple or passive constructions, there are no forms that cannot be found in General English.

b) Despite the key role of lexis in ESP courses, it is not possible to reduce ESP solely to specific vocabulary used in, say, business meetings or negotiations; it implies the investigation of the way business words are used in communication, and also of the skills and knowledge that enable people to use them.

c) ESP teaching is not different from other forms of language teaching. The content may vary, but the learning process is the same. In other words, there is not an ESP methodology as such, but rather methodologies that can be applied to ESP classes. From this perspective, ESP is not seen as a “product”, but as an “approach”, based on students’ needs.

Once the common ground of GE and ESP has been established, teacher trainees should get familiar with the particularities of teaching ESP, the tasks they are supposed to fulfil, and the multiple roles they will have to perform. Perhaps the first and most valuable information they should get is that they will learn many new things that they did not study during their university years.

## **2. Guidelines for Teaching ESP**

### **2.1. Needs Analysis**

As mentioned above, needs analysis is the main feature of ESP courses. It is known that learners study a language because they have certain personal needs, learning needs and professional needs. Sprat suggests that: “Meeting these learner needs is part of being a good teacher” [3]. However, what makes ESP different is not “the existence of a need as such, but rather an awareness of the need” [1 - 3].

A needs analysis typically takes place in the classroom, involving the teacher and the learners. The following points have to be considered when conducting this kind of analysis:

- Teachers should collect and analyse information about what the students need to know (target needs) and what they already know. The information gap between the two represents the basis for future training.

- Some useful information gathering procedures are: written questionnaires or tests, oral interviews, observation during class activities.

• It is common practice for ESP teachers to do a needs analysis at the beginning of the course, yet this should be an ongoing process because a teacher “will always have to adapt to new information and new perspectives as the course progresses” [4].

• Teachers must be aware that needs analyses may not always provide useful information. Scrivener lists some of the reasons for this phenomenon: students may not take the task seriously, and consequently offer little or no information at all, or even information that is not true [5]. There are cases when students do not know what they want or need to study, or they consider it is not their responsibility to think about this matter. In these situations, teachers need to explain to students that learning is not a product, but a process that needs to be negotiated, remade and periodically adjusted.

In order to be complete, the needs analysis should also take place outside the classroom, and involve dialogues with other stakeholders who can provide useful information and advice with reference to the above-mentioned gap. This type of investigation relies on discussions with other trainers, colleagues and supervisors, people who work in the target situation, or even former students who can inform on how much the English course they had once taken has helped them at their workplace. The teacher can also collect information from reading specialist subject books, methodology guides, ESP journals etc.

Discussing the importance of analysing the target situation, Frendo refers to the concepts of “discourse community”, first introduced by John Swales, and “the Community of Practice”, made popular by Étienne Wenger [6]. Frendo explains that the teacher needs to understand the community their students will work in, by paying attention to its discourse: what language is used and considered appropriate in that particular community. When they start working, the students will be part of a Community of Practice, which is basically a group of professionals/colleagues who, by working together, develop typical behaviours and ways of doing things. The teacher should collect data related to these communities in order to establish what to focus on in the class.

## 2.2. Course Design

Based on the data collected from the needs analysis, the ESP teacher has to “produce an integrated series of teaching-learning experiences” [1-4], that is, design a course that will meet the students’ needs, with the aim of “filling” that gap between what the students know and what they are expected to know in order to function in the target situation. If in the 1990s, ESP materials were hard to find in Romania, and teachers had to design their own teaching materials, nowadays, the wide range of language coursebooks available on the market covers virtually all areas of ESP and all levels of proficiency. The role of the teacher is less to design materials, but to evaluate and select the ones appropriate for his/her classes.

For teacher trainees, using the syllabus set down by a coursebook has a number of advantages:

- it is what teachers use in class;
- it provides a framework within which trainees lessons will be planned;
- it provides learning continuity and progression for both trainees and students;
- it includes tried materials and activities;
- it is often accompanied by CDs and student workbooks;

- it helps the course tutor/mentor who does not have to spend much time devising guidelines.

There are also a number of objections to using a coursebook:

- it prevents teachers, especially trainees, from exploring diverse materials;
- teachers rely on the course book without questioning the material;
- it may not meet the students' needs;
- in the case of teacher trainees, it may not provide the adequate material for them to practise certain teaching techniques.

Regarding the content of an ESP course, the teaching perspectives have changed over the years. Thus, in the 1970s, courses were language-oriented, the focus being on teaching specialised vocabulary and grammar.

The late 1970s and 1980s witnessed a major turn from linguistic competence to communicative competence, and communication skills became the target of ESP teaching. In the past years, lexis has come back into focus and is regarded as an essential part of any ESP course [2 - 4].

Students need to understand and master professional terminology in order to communicate efficiently with/as specialists.

Block points out that many researchers have focused on creating lists of technical vocabulary which can be useful when designing ESP courses. Coursebook authors have the possibility to design materials based on corpus studies into authentic spoken and written texts.

These corpus studies identify high-frequency language elements: specialised lexical items, professional collocations and phrases, acronyms and abbreviations used in a particular domain [3 - 4]. Discussing the relevance of highly frequent words for didactic purposes, Thornbury explains that "the relative frequency of a word is a key factor in determining its inclusion in a syllabus. The argument for teaching the most frequent words in the language is a powerful one. It is claimed that the most frequent words express the most frequent meanings in the language" [7].

In order to successfully use authentic materials in class, teachers need to acquire a basic level of specific knowledge in their students' academic subject.

This can be achieved through instruction during the training period and self-instruction, which, useful as they may be, often prove insufficient to prepare teachers for classroom demands [8].

While Hutchinson and Waters argue that ESP teachers "have to struggle to master language and subject matter beyond the bounds of their previous experience" [1 - 5], other researchers consider that teachers have to "understand the nature of the material of the ESP specialism" [9], rather than "struggle" to acquire a high level of subject knowledge.

The degree of "struggling" depends on the general accessibility of the subject domain. Fields such as medicine and economics are familiar to many people as they are connected to personal experiences or public debates, whereas subjects such as chemistry or engineering, by their technical nature, are perceived as posing severe linguistic barriers.

From the author's experience, the teacher can rely on the students' subject knowledge, thus making them 'partners' in the process of teaching/learning and increasing their motivation to engage in genuine communication in the class.

The teacher acts as a language consultant, accepting equal status with the learners who have authority on subject knowledge.

### 2.3. Networking

Since teachers cannot be expected to become experts in the subject matter, collaboration with subject specialists becomes essential to efficient ESP classes and programmes. Collaboration can take different forms:

- specialised information and advice that ESP teachers receive from subject teachers;
- the joint work of ESP and subject teachers to design appropriate syllabuses and teaching/learning activities;
- team-teaching – ESP and subject teachers work together in the classroom, teaching the class simultaneously.

The ESP teacher and the subject teacher need complementary, not overlapping roles in their collaboration relationship. Hutchinson and Waters underline this idea, showing that “the subject specialist can help the ESP teacher in learning more about the learners’ target situation”, while “the ESP teacher can make the subject specialist more aware of the language problems learners face” [1 - 6]. On the other hand, it is obvious that teachers’ collaboration is likely to increase students’ motivation as they see that their English course can directly be related to their subject course.

Networking in ESP also refers to the collaboration between language teachers. When faced for the first time with a business English course, for instance, the teacher should remember that other peers have taught that course before, so he/she does not have to spend a lot of time on searching or designing materials and classroom activities, because there is always a colleague around who can offer information and advice. At the same time, there is also the possibility of peer teaching with the aim of enhancing students’ learning abilities.

### 2.4. Methodological Approaches

Hutchinson and Waters’ famous definition of ESP as “an approach to language teaching in which all decisions as to content and method are based on the learner’s reason for learning” [1 - 7] signalled the shift from the traditional teacher-centred approach to a learner-centred approach which enabled further development in language teaching. Maryellen Weimer explains that “in order to be learner-centered, instructional practice needs to change in five areas” [10] which refer to:

- the balance of power: teachers share the decision-making power with their students;
- the function of content: course content is dictated by learners’ needs;
- the role of the teacher: instructors guide and facilitate learning;
- the responsibility for learning: students develop learning skills that will enable them to function as independent, autonomous learners;
- the process of evaluation: students are involved in self- and peer assessment activities, thus developing the skills needed by self-regulating learners.

Researchers agree that ESP is a course that accepts “many different approaches and a willingness to mix different types of materials and methodologies” [11]. In the classroom, teachers can use a variety of methodological approaches, depending on the type of ESP they are teaching, the needs of the students, and also their level of linguistic competence.

Starting from the assumption that the goal of an ESP course is to help students acquire the skills that they will need in their future work community, great emphasis has been placed on communicative language teaching, which has been very popular since the

late 1970s. This approach is focused on the functional and communicative potential of language, working to develop learners' fluency, rather than their linguistic accuracy. Consequently, learning activities are selected according to how well they engage the learner in meaningful and authentic language use. For example, in a business English class, role plays are very useful, as they replicate the types of situations the students are likely to face in the future: business meetings, presentations, negotiations etc. In the late 1980s, Thomas Huckin argued that role plays "teach students simple social routines" and therefore are appropriate for lower levels, but "too simple for university students" [12]. He suggested instead the case study approach which is based on more elaborate problem-solving situations. Didactic case studies epitomise the learner-centred perspective and can be used with good results in teaching English for Medicine, Business or Law.

All in all, Marcu emphasises the idea that „based on the information gathered from the learners, taking into consideration their level of English, discussing and establishing the preferred methods for teaching and learning, both parties – teacher/trainer and learners embark on a journey with a specific end – that of becoming fluent speakers/users of the language” [13].

### 3. Teaching Practice

Apart from the theoretical course, teacher trainees need to observe and practise teaching. The main reason of having teaching practice is that teaching, like any other skill, cannot be learned without actually doing it. At the same time, As Boncea points out, it must not be forgotten that “training takes less to acquire and consolidate, it displays immediate results, whereas teaching implies deeper complexity, more stages and stretches over longer periods in producing results” [14].

An ESP training programme should consist of classroom observation and teaching practice. For instance, trainees will have to observe ten lessons taught by the mentor and twenty lessons taught by their peers, and teach five lessons. The organisation of the teaching practice depends on the training programme of which it is part and also on the institution which provides it. Generally we speak about:

- **apprenticeship**, which implies a teacher who has one or two trainees as “apprentices”. These trainees observe the lessons taught by the teacher and teach some of the lessons, or parts of them.

- **peer teaching**, which refers to the situation in which one trainee takes the role of the teacher, while the students are his/her fellow trainees.

- **microteaching**, which refers to a time when the trainees do not teach a whole lesson, but only a part of it in order to practise one particular teaching technique, for example how to organise a groupwork activity.

Apprenticeship is the most used form of teacher training in Romania, therefore a future ESP teaching programme should also include the other two forms so as to ensure a complete framework for developing ESP teaching competence.

The classical procedure that trainers and trainees follow is based on six stages:

- the trainee and the trainer agree on what is to be taught;
- the trainee prepares a lesson plan;
- the lesson plan is discussed with the trainer and possibly with the other trainees;
- the trainer makes any necessary comments or changes to the plan;
- the trainee teaches the lesson;
- the trainer offers feedback.

### 3.1. ESP Teaching Practice Objectives and Outcome

Teaching practice plays an important role in making ESP trainees aware of:

- how learners learn, what needs they have, and what skills they need;
- the language content of an ESP course;
- the language problems that students have;
- teaching techniques;
- classroom management skills.

The main objectives of ESP teaching practice would be one or several of the following:

- to allow trainees to observe real teaching;
- to give trainees the possibility to get in touch with real learners and their learning needs;
- to expose trainees to students of different levels of performance so that they understand the different approaches that are required;
- to provide trainees with opportunities to try out different teaching techniques under the trainer's supervision;
- to help trainees become increasingly more independent and able to take decisions in the classroom;
- to give feedback on the lessons being taught;
- to help trainees assess their own teaching and to get them accustomed to being observed;
- to make trainees aware of the responsibility they have for their students.

Just like an ESP course, the teacher training course should focus on learners' needs. Therefore, it generally offers trainees the opportunity to work on a variety of teaching skills. These skills are exercised in class or with other fellow trainees, first under the trainer's detailed guidance.

The trainer will tell trainees what to teach and which materials and techniques to use. This form of support will gradually be withdrawn as trainees gain in self-confidence and are able to identify students' language needs and to prepare adequate materials and activities to satisfy those needs.

The training course is definitely a time for experimenting. It is the only time that young teachers have to try out their ideas and get professional help and feedback. You try, you make mistakes, you reflect upon them, and you learn your lesson for your other future lessons. It is a fact that more is learned from lessons which do not go on very well, than from those which are successful.

Once teacher trainees gather some experience and master basic teaching techniques, they will be able to relax and to observe the students as the class is going on.

They will notice how their students are working individually and in pairs or groups, where they have problems etc.

At this stage, the young teachers will also be able to step back and look at their own performance with a critical eye. They will gradually become more aware of their strengths and weaknesses, and will know what needs to be changed in their teaching. The main aim of teaching practice is therefore to enable teacher trainees to become independent learners.



### 3.2. Team Work

During teaching practice, trainees are expected to work in a team and help each other reach their common goal, that of acquiring the skills and techniques necessary in their future careers of ESP teachers. We believe that teaching practice is not a competition, but an opportunity for them to “grow” professionally with the aid of all the people involved in the programme, trainers and trainees alike.

There are many ways in which trainees can help each other [15]:

- They can exchange information about language, activities, resources, students.
- They can make suggestions for ways of designing or improving lesson plans.
- Before a class that a trainee has to teach, his/her colleagues may help with the equipment or the seats arrangement.
- After a class, they may take part in the post-observation sessions.
- When two trainees are teaching a class together, they should both prepare the lesson and evaluate it afterwards.
- If several trainees are supposed to teach the same group of students, they should keep the others informed as to what they did in a previous lesson and what they are going to do in the future, so that the lessons interrelate.

By working in teams, the teacher trainees become part of a community of practice, much like the communities their future students will integrate into. In this way, they will be aware of the mechanisms, the social and linguistic patterns of such communities, and will be able to rely on this awareness when analysing the learners’ target needs.

### Conclusions

An ESP training programme in Romania is meant to teach prospective teachers the particularities and requirements of ESP, along with the methods of designing their courses and adjusting their teaching to fulfil those requirements. From the beginning, they need to be ready to embrace new perspectives on language teaching and to be open to study new subjects so that they can get working knowledge of their students’ field of studies. By the end of the training, the teachers will have gathered the necessary information about the importance of knowing their students from the data provided by a needs’ analysis, the relevance of designing lessons that are meaningful for students’ subjects and can help them acquire learning strategies and critical thinking skills, the necessity of permanently assessing their lessons to see whether the learners respond well to the input and can reach the learning objectives.

The practice stage is meant to enable teacher trainees to observe real teaching, to get in touch with ESP students, and to finally put into practice what they have learnt. Most trainees consider teaching practice the most valuable stage in the process of their professional training. Our argument is that this part of the programme teaches not just teaching, but the important role of collaboration and team work. It also teaches that one learns teaching by doing it and that it takes time to build and consolidate the necessary skills. In conclusion, learning teaching does not stop when the training course finishes; on the contrary, this is the moment when a teacher’s development really begins.

### References

1. Hutchinson T., Waters A. *English for Specific Purposes*. Cambridge: Cambridge University Press, 1994, pp. 8; 18; 53; 65; 160; 164; 19.
2. Harmer J. *The Practice of English Language Teaching*. 3<sup>rd</sup> edition. Harlow: Longman, 2003, pp. 10.

3. Sprat M., Pulverness, A., Williams, M. *The TKT Course*. 2<sup>nd</sup> edition. Cambridge: Cambridge University Press, 2005, pp. 57.
4. Block S., Lockwood, R.B., Frendo, E. *The 6 Principles for Exemplary Teaching of English Learners: Academic and Other Specific Purposes*. TESOL International Association, 2020, pp. 5.
5. Scrivener J. *Learning Teaching*. Oxford: Macmillan, 2005, pp. 71.
6. Frendo E. *So You Want to Teach English for Specific Purposes? How not to Be A Muggle* [online]. 2019. [accesat 22.02.2021]. Disponibil: <https://eltabjournal.com/teach-english-for-specific-purposes>
7. Thornbury S. *How to Teach Vocabulary*. Harlow: Longman, 2002, pp. 35.
8. Boswood T., Marriot A. Ethnography for specific purposes. In: *English for Specific Purposes*, 1994, 13(1), pp. 3-21.
9. Harding, K. *English for Specific Purposes*. New York: Oxford, 2007, pp. 7.
10. Weimer M. *Learner Centered Teaching. Five Key Changes to Practice*. San Francisco: Jossey-Bass, 2002, pp. XVII.
11. Dudley-Evans T., ST John M.J. *Developments in ESP: A Multi-disciplinary Approach*. Cambridge: Cambridge University Press, 1998, pp. 30.
12. Huckin T.J. Achieving Professional Communicative Relevance in a 'Generalised' ESP Classroom. In: Chamberlain, D., Baumgardner, R.J., ed. *ESP in the Classroom: Practice and Evaluation*. Oxford: Modern English Publications and the British Council, 1988, pp. 61-71.
13. Marcu D. The Post-communist Era: "the bloom" of ESP in Romania. In: *Revista de Științe Politice. Revue des Sciences Politiques*, 2020, 66, pp. 117-126.
14. Boncea I.J. Teaching and Training Approaches during Technical English Classes. In: *Analele Universității din Craiova. Seria Științe Filologice. Limbi Străine Aplicate*. Anul IX, Nr. 1, Craiova: Universitaria, pp. 37-44.
15. Gower R., Phillips D., Walters S. *Teaching Practice Handbook*. London: Macmillan, 1995, pp. 5.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).04](https://doi.org/10.52326/jss.utm.2021.4(2).04)  
UDC 378.147:004



## ONLINE TEACHING AND LEARNING – A NEW REALITY

Diana Marcu\*, ORCID ID: 0000-0002-2696-8621

University of Craiova, 13 Al Cuza St, Craiova Romania  
\*dianamolcut@yahoo.com

**Abstract.** The present paper aims at briefly summarizing the impact the 2019 - 2020 pandemic outbreak had on the educational field, when, with no prior preparation, all classes in the academic environment moved in the cyberspace, unveiling challenges for both teachers and students. The paper discusses the concepts of both online teaching and learning, their use to meet the needs of a specific category of students in different parts of the world as well as similarities and differences between the traditional and the online means of educating. The shift to mass online education has proved to be challenging, even impossible in certain areas, unveiling difficulties for all stakeholders involved. Though technology is widely used nowadays in all aspects of our lives, special focus is laid on teachers' and students' challenges, their expectations as well as their feelings regarding the new reality – that of attending all classes online in order to reach the goal: the acquisition of information and knowledge necessary in their future professional lives.

**Keywords:** *challenges, expectations, needs, online environment, traditional education.*

**Rezumat.** Prezenta lucrare își propune să rezume impactul focarului de pandemie 2019 - 2020 asupra câmpului educațional, când, fără pregătire prealabilă, toate clasele din mediul academic s-au mutat în spațiul cibernetic, dezvăluind provocări atât pentru profesori, cât și pentru studenți. Lucrarea discută atât conceptele de predare și învățare online, utilizarea lor pentru a satisface nevoile unei categorii specifice de studenți din diferite părți ale lumii, cât și asemănările și diferențele dintre mijloacele tradiționale și cele online de educare. Trecerea la educația online în masă s-a dovedit a fi provocatoare, chiar imposibilă în anumite domenii, dezvăluind dificultăți pentru toate părțile implicate. Deși tehnologia este utilizată pe scară largă în zilele noastre în toate aspectele vieții, se pune accent deosebit pe provocările profesorilor și elevilor, pe așteptările lor, precum și pe sentimentele lor cu privire la noua realitate - aceea de a participa la toate cursurile online pentru a-și atinge obiectivul: dobândirea de informații și cunoștințe necesare în viitoarea lor viață profesională.

**Cuvinte cheie:** *provocări, așteptări, nevoi, mediu online, educație tradițională*

### The concepts of online teaching and learning

Nowadays, we all live in an era of constant transformations, new discoveries, unprecedented findings, a world which evolves hand in hand with the advancements in technology. Education and the instructional means are also part of this ever-changing

process, many institutions and stakeholders taking an interest in how to better use the available technology to improve the educational process, and, thus, the ultimate goal of any instruction – the knowledge of their learners. Ever since the Internet appeared, there has been an opening of barriers in terms of space and time. The need of people to communicate, to network with their peers in other parts of the world turned the internet into a global social environment. According to [1], mass media and satellite communication, by its continuous info glut, have succeeded in bringing people and places closer than ever before, thus giving rise to the recent phenomenon of globalisation.

Education also finds its path into this virtual world, many practitioners using the Internet as an extra source of information or as a tool of turning the courses into more challenging and exciting experiences. Other institutions decide on integrating online courses into their curricula in order to meet the requests of these days. Practically, online teaching refers to the delivering of information and contents through the use of the Internet or the digital world. It is a new means of communication helped by the advances in technology.

Online learning is present under different terminologies, such as distance-learning, virtual learning, computer-assisted learning, e-learning, etc., with various definitions connected to the idea of educational materials delivered to remote audiences using computers and the Web. Ally defines it as the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience [2]. The goals and objectives of any course or learning process remain unchanged, the difference lies in the means of obtaining or reaching them: via the traditional way or the digitalized world.

As Lehman and Conceição state in the preface of *Creating a Sense of Presence in Online Teaching. How to “Be There” for Distance Learners*, from an educational perspective, technology has given us the opportunity to expand our knowledge and extend our reach to people and places we never considered before. The benefits are beyond our imagination: saving us time, travel and cost; avoiding the necessity to take risks in going to other locations; allowing us to store information and knowledge and carry them with us wherever we go through mobile devices and other ‘green’ technologies; connecting us to diverse people all over the world and bringing us closer together; allowing us to work in virtual communities that are no longer limited to physical places; and giving us the opportunity to be present with each other without boundaries [3].

When it comes to both online teaching and learning, throughout the recent years, several studies have appeared with a focus on this new means of education. Practitioners were mostly interested in how to transfer the face-to-face courses to the virtual environment and still get the targeted results. It is known that academic institutions decided upon the integration of such courses as a result of students’ needs. At the level of universities, there are students who are already employed and cannot attend all classes, yet their interest in acquiring information and knowledge in the field is at the same level with that of the students who are able to participate daily. For them, this type of distance-learning, the online courses, becomes a blessing. At the same time, we find students who are more interested in this distance-learning approach, out of different reasons: they may find the online attendance an easier approach since they are born in this era of technology, they use it frequently for other reasons and are more accustomed, not to mention feel at

ease, to how to use technology to get better results. And for them, attending online courses represents a pleasure.

Around the world, there have been several attempts of creating exclusive online learning programs for students, but only few succeeded in the end. In the book entitled *Online Learning and Teaching in Higher Education*, the authors offer the successful example of the U.S.A., where, since the 1990s, the US National Centre for Educational Statistics has recorded a doubling of enrolments in the distance-learning courses as well as a significant growth in the delivery of such courses. As a result, the University of Phoenix proved a success in offering many distance-based courses via the Internet. The success of the online American universities is linked with a segmented distant learning market, strong in its vocational and professional focus. Another successful example is given by Australia (Open Learning Australia) where the geographical features have made the online distance learning extremely attractive. At the other end, the e-University project, set up in the UK for a period of three years, was closed in 2004, while the online university for Europe also failed to establish itself [4].

In Romania, there has not been any attempt of establishing an exclusive online academic provider, yet, universities around the country have invested a lot in technological facilities. Staff and students have access to e-books and e-journals, campuses and academic locations provide access to the Internet and other digitalized facilities, so that learners and teachers use them as an assistance in the process of both delivering and acquiring knowledge. Besides teaching in a traditional manner, teachers use websites to help students review material or gather additional information on the subject. At the same time, many resources such as course materials, are also available online. Therefore, we can talk about an e-learning process and not so much of an online course.

### **The new reality – the shift to online education**

The end of 2019 and the beginning of 2020 were characterized by the emergence of a new virus which rapidly spread around the world, affecting every aspect of our lives. The pandemic changed, in a very short period, all aspects of our existence: the way we live, work, communicate, interact, alongside a totally negative impact on world's economies. Education and the learning process were also highly affected, since many countries decided to close all institutions and turn to distance education and online learning. This shift has proved to be extremely difficult, not to mention impossible in many parts of the world. According to the UNICEF report *How Covid-19 is changing the world*, less than half of households around the world have access to Internet. And the report continues, showing that the Internet is not the only missing technological tool learners need in order to continue their education. Of the total number of households, almost 80% possess a mobile phone, 50% a radio, and almost 50% television. Of course, rural areas are mostly affected, but the situation is not great in some urban areas as well [5]. In Romania, according to the National Institute of Statistics, in 2020, 78.2% of the total number of households have home internet access, with differences between the urban (84.8%) and rural (69.7%) areas [6].

Besides the access to technology, which is vital in an exclusive online learning environment, all stakeholders in the educational field were faced with the challenge of adapting their courses fast to a new means of educating. And this is a very difficult task to achieve, especially when one deals with lack of time for preparation. The European

Commission helped, by offering several online learning platforms for teachers and educators which could be accessed in order to ease their tasks and even exchange ideas and resources depending on their needs. Several examples of platforms are: School Education Gateway, e-Twinning, Learning Corner, EIT – European Institute of Innovation and Technology, etc. [7]. At the academic level, universities in Romania have been closed for face-to-face courses since March 2020, so all courses were moved to the online environment, with access to different e-learning platforms: Moodle, Zoom, Google Classroom, WebEx, etc.

These rapid changes have taken aback most teachers and students since they were, all of a sudden, placed in a situation they hadn't encountered before. Especially at the beginning, feelings of anxiety, fear of unknown, uncertainty arose among them. Teachers were preoccupied with the urgent need of designing their courses for the online format so that they still deliver a high-level of academic knowledge which suits the demands of the learners. Students were faced with the unknown, being somehow reserved towards what is expected from them in this new educational environment.

### **Teachers' challenges and expectations**

Once the decision of moving all academic courses online, a series of challenges unveiled in front of educators. Though many researchers have given attention to online teaching and published studies related to it, again, the short time for preparation represented the greatest challenge. In traditional classes, technology is generally used as a helping tool in providing information and experience.

When teaching online, technology not only serves as background, but also as a context for instruction, since it functions as the place where teaching and learning happen. That is, the place of the course is cyberspace, as that is where instructors and students interact, exchange information and ideas, make course products, and otherwise carry out the work of the course [8]. Planning a course online is not totally different from the traditional way of assembling it. The goals of the course remain unchanged, the objectives as well, while the requirements and tasks are not to be drastically changed, but rather adapted. Both in traditional and online education, according to Boncea, teachers and trainers alike should prepare future graduates for the realities that the employment market relies on [9].

When an academic institution decides upon the integration of a certain online course, teachers have the possibility of designing it thoroughly, while, in the case of the pandemic outbreak, teachers were faced with the decision to continue their teaching online, without any prior preparation. So, most of them, had to 'learn by doing', experiencing and changing aspects when needed. The courses couldn't be designed for the online activity from the beginning, they were adapted 'on the way', mostly in a fast-pace, so that they met the outcomes. Nilson and Goodson talk about specific phases of an online course design: analysis; design; development; teaching and learning; evaluation; revisions [10]. Well, at the beginning of 2020, teachers did not have sufficient time to prepare such a course, all they could do was to adapt the course to the requirements of the online system. While teaching and learning, they had to adapt assignments and evaluation methods to the characteristics of the virtual world. And not only: new activities and tasks had to be designed so that students could better understand the content of the subject and get engaged in the entire process of knowledge acquisition. The designed activities should provide opportunities for

students to find a bridge between what they already know, and that which they have read, heard or seen in the e-lecture. Students need opportunities to reflect on the ways in which their individual understanding aligns with that of the lecturers, and the ways in which it is different [11].

In order to get the most out of the teaching process, teachers constantly need to change roles, depending on situations and, this is valid both for physical presence courses and online ones. Teachers' behavior during a class leaves an impact on both the general opinion of students on the subject taught as well as on the enthusiasm learners show when attending the classes. It's not sufficient to offer the necessary information, nor to communicate the latest, updated data if the teacher does not empathize with the students and is unable to connect with them closely. Bender discusses the six teaching roles that McKeachie (1978) identified in traditional classes and believes all of them can also be applied to the online environment. The teacher can be a *facilitator* who enhances student learning by encouraging active participation in discussion and by helping the students to see education as meaningful and relevant [...]; an *expert* who communicates expertise through lectures and discussions, and is able to stimulate students without overwhelming them; a *formal authority* who helps students by establishing boundaries such as acceptable conduct and dates of submission of material; a *socializing agent* who has contacts within the larger academic community, and as such can be helpful to students providing such things as letters of recommendation and links to research and publication sources; an *ego ideal* who is charismatic and shows commitment and enthusiasm not only to the subject matter but also to the students themselves; a *person* who demonstrates compassion and understanding of student needs [12]. Indeed, I believe all these roles are vital in establishing long-term relationships between teachers and students, relationships based on mutual respect, empathy and understanding, yet, the degree in which such reports are settled are somehow different in the online versus face-to-face meetings. We connect better with one another when we meet in person since, from the beginning, we form certain opinions easier based not only on what we say and how we react but also on the body language which cannot be always perceived online.

In the traditional way of teaching, you, together with the group, create a specific atmosphere of the class, a certain dynamic which cannot be transferred online. If voice and intonation are still kept in the live sessions of online courses, reactions, gestures, expressions, the entire body language cannot be fully transposed on a screen and this changes the entire process of communication. Online, students cannot interact with one another with the same naturalness found in a face-to-face meeting. Teachers are there for them, yet, they cannot observe them as they would in a traditional class.

Then, there is the matter of the type of subject taught. If many courses can be delivered online, without having to change content, tasks, activities, there are some which make this mission almost impossible. When we deal with subject matters which include practical activities in laboratories, the online environment cannot be of help. Students cannot experiment at home, they lack the resources and the necessary guidance. In my opinion, these were the specializations mostly affected in the learning process, since they couldn't have access to labs and experiments, only to the theoretical approach of the subject. If one can easily move a course on the cyberspace, such as philosophy, foreign languages, literature, business studies, or any other subjects which are mostly based on the theoretical approach, followed by discussions and debates, other, such as chemistry, areas

of medicine, design, and so on, require the physical presence of both educators and learners in a lab. No matter the degree of teacher's involvement as a moderator in the class, offering the students the freedom to participate in debates, expressing opinions to make the course challenging and attractive, there are specializations where students need to test, experiment, 'touch', discover, to adapt knowledge to practical experience.

### **Students' challenges and expectations**

When deciding upon enrolling in a distance-learning course, learners have specific expectations right from the beginning. These courses meet their expectations and needs. First, there are employees interested in continuing their studies while working, or taking up a different specialization they need at the present workplace, then, there are students who live remotely from the academic location who need to save money on travel and accommodation, or others who are interested in enrolling at a certain, prestigious university and these online courses suit their needs best.

Students enter an online course with the expectation that the course will be more attuned to their needs as learners. This may mean that the course is more convenient for them because of distance or because of work and family demands [13].

Distance-learning students differ from those who take up traditional, face-to-face courses in many ways, therefore their expectations are also different. Based on their higher age, there are certain features that relate to their expectations:

\* Students will usually have a much greater experience of life. This means that they approach their studies quite differently, have a different attitude and assess it differently.

- Most of them bring considerable experience of working life to academic courses, and this also has an effect on the ways in which they study, in particular when the studies and the professional experience cover the same field [...].
- Many of them come from backgrounds in which academic studies were not offered when they were younger, and they use distance education as a second chance [...].
- There are distance students who want to reach a higher socio-economic status as a result of their experiences at work. Those are the upwardly mobile students.
- Distance-learning students have more qualifications than students in traditional universities. Many achieved considerable success at school (even where they finished their education in evening classes, for example), and at university, and above all in their professions. This naturally has an effect on their motivation and their attitude to their studies.
- Studying at a relatively late age has in general a completely different function than with 19 - 25 year-old students because it fits into plans for life and life-cycles in a different way [14].

To all these students, the online education is the approach which best suits their needs as well as their expectations. But, what happens to those students who enrolled in physical-presence studies and were faced with the unpredicted situation of attending all classes online? This is a question which doesn't have a full-size answer at the moment, it needs further analyses when this period ends, so that to get a clearer view of how the students perceived the online learning experience, how the process met or not their expectations and the general impact it had on their student lives.

When discussing with my students at the Faculty of Electrical Engineering about their feelings of meeting and learning online, at the beginning, students were somehow



reserved about moving the process into the cyberspace, since they were more preoccupied with what it would be expected from them in the online environment rather than how to use technology in their learning process. With proper guidance from the teachers, their fears of unknown were rapidly forgotten and they could focus on the purpose of the learning process. At the same time, the digitalized world did not represent an issue for most of them since they considered it a user-friendly environment. They were able to understand the content of the subject matters, they easily dealt with the online tasks and requirements, so, the online environment did not pose any special issues for them. This latter aspect is easily understood if we take into consideration the fact that most of these students were born and raised in the technological world, they've been accustomed to computers, programs and the virtual world in general ever since they were very young.

Yet, by the end of the semester, most of them said they started missing the physical interaction, the face-to-face meetings both with their peers and teachers and hoped for a rapid return to the traditional way of learning. In their opinion, the online environment, though proficient in content, couldn't supplement the need to interact, to bond relationships with one another, to get to know their teachers and colleagues better as it usually happens when they meet at college daily. In their case, they also lacked the applicative activities since, the engineering field implies working in labs, conducting experiments, placing theory into practice. So, no matter how well an online course develops, independently of its outcomes, in the case of students primarily interested in the physical-attendance courses, the online environment did not meet their demands.

### **Conclusions**

Online teaching and learning represents a great means of educating when it meets the needs and expectations of all stakeholders involved in the process. Out of diverse reasons, many learners choose this approach since it best suits their needs and motivates them in their quest of acquiring the necessary knowledge. This applies to those programs specifically intended to take place in the cyberspace, for a particular category of students, yet, it cannot be transformed into a mass educational technique, at least not for the moment, since many students are still eager to learn in the traditional way.

The pandemic which started in 2019 - 2020 and which conducted to a shift of all courses to the online environment, no matter their specificity, unveiled challenges for both teachers and learners. Though many of the courses proved to be a success from the point of view of their content, teachers and students being highly involved in the process of delivering and acquiring necessary knowledge, the need to physically interact, to create links with one another represented the greatest wish of learners during this period.

Even for the advocates of face-to-face teaching and learning, technology still remains a great tool to be used in classes for additional information, for the creation of exciting tasks and activities, a great complement to the subjects discussed in class. The full impact of the mass online studies during the pandemic is to be further surveyed and analyzed when the period ends and both students and teachers return to a certain approach of instruction – traditional or virtual, depending on their needs and preferences.

Therefore, a conclusion may be drawn: the success of the educational process is related to what learners expect from the beginning, when they enroll to a specific program: if they are interested in the traditional way of education or the virtual environment.

**References**

1. Bălănescu O. The Fall of Communism and Its Impact on English Teaching and Learning, in *Revista de Științe Politice. Revue des Sciences Politiques*, 61/2019, Craiova: Universitaria, pp. 57-67.
2. Ally M. Foundations of Educational Theory for Online Learning in *The Theory and Practice of Online Learning*, edited by Terry Anderson, AU Press, 2008, p. 17.
3. Lehman R.M., Conceição, S.C.O. *Creating a Sense of Presence in Online Teaching. How to "Be There" for Distance Learners*, Jossey-Bass Guides to Online Teaching and Learning, Wiley & Sons, 2010, Introduction, p. vii.
4. Bach S., Haynes Ph., Smith J.L. (2007) *Online Learning and Teaching in Higher Education*, Open University Press, 2007.
5. UNICEF report *How Covid-19 is changing the world, A statistical Perspective* [online]. Volume I, May 2020. [accessed on 19.02.2021].  
Available: <https://data.unicef.org/resources/how-covid-19-is-changing-the-world-a-statistical-perspective/>
6. INS Press Release, January, 2021. [online]. [accessed on 19.02.2021]  
Available: [https://insse.ro/cms/sites/default/files/com\\_presa/com\\_pdf/tic\\_r2020.pdf](https://insse.ro/cms/sites/default/files/com_presa/com_pdf/tic_r2020.pdf)
7. official website of the European Union, Education and training. [online]. [accessed on 18.02.2021]  
Available: [https://ec.europa.eu/education/resources-and-tools/coronavirus-online-learning-resources/online-platforms\\_en](https://ec.europa.eu/education/resources-and-tools/coronavirus-online-learning-resources/online-platforms_en)
8. Howell Major C. *Teaching Online. A Guide to Theory, Research, and Practice*. Johns Hopkins University Press, 2015, p. 10.
9. Boncea I.J. Teaching and Training Approaches during Technical English Classes in *Annals of the University of Craiova*, Year XIV, no.1/2018, p. 37.
10. Nilson L. B., Goodson, L.A. *Online Teaching at its Best. Merging Instructional Design with Teaching and Learning Research*. Wiley & Sons, 2018, pp. 39-40.
11. Alexander Sh., Boud, D. Learners still learn from experience when online, in *Teaching and Learning Online. Pedagogies for New Technologies*, Routledge, 2001, p. 8.
12. Bender T. *Discussion-based Online Teaching to Enhance Student Learning. Theory, Practice, and Assessment*. Stylus Publishing LLC, 2003, p. 12
13. Palloff R.M., Pratt, K. *Lessons from the Cyberspace Classroom: The Realities of Online Teaching*. Wiley, 2001, p. 123.
14. Peters O. *Learning and Teaching in Distance Education. Pedagogical Analysis and Interpretations in an International Perspective*. RoutledgeFalmer, 2004, p. 13.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).05](https://doi.org/10.52326/jss.utm.2021.4(2).05)  
UDC 37.068:004



## COMMENT FAIRE PROGRESSER LA PRATIQUE PEDAGOGIQUE?

Ludmila Ungureanu\*, ORCID ID: 0000-0003-4986-9172

Technical University of Moldova, Ștefan cel Mare str. 168, Chișinău, Republic of Moldova  
\*ludmila.ungureanu@lm.utm.md

Received: 03.11.2021

Accepted: 04.23.2021

**Abstract.** This study is the result of a more recent questioning on the limits of the profession of teacher on what we are supposed to practice when we want to build effective approaches to students who have difficulty into university learning. However, periods of didactic crisis are present among experienced teachers. They are justified by the desire to trigger new approaches. This time, it is a question of adopting an innovative pedagogy in the context of the booming development of new technologies, where the role of the teacher is undergoing major changes. This questioning therefore appears following long-term observation and regular consultation within a teaching team in order to advance teaching practice.

**Keywords:** *psycho-educational approach, support program, motivational approach, flipped classroom, project approach, problem approach.*

**Résumé.** La présente étude est le fruit d'un questionnement plus récent sur les limites du métier d'enseignant, sur ce qu'on est censé y pratiquer lorsqu'on veut construire des démarches efficaces auprès des étudiants qui ont du mal à rentrer dans les apprentissages universitaires. Or, les périodes de crise didactique sont présentes chez les professeurs chevronnés. Elles se justifient par le désir de déclencher de nouvelles approches. Il est question, cette fois-ci, d'adopter une pédagogie innovante dans le contexte du développement en flèche des nouvelles technologies, où le rôle de l'enseignant subit des modifications importantes. Cette remise en question apparaît donc suite à une observation de longue haleine et une concertation régulière au sein d'une équipe didactique afin de faire progresser la pratique pédagogique.

**Mots clé:** *approche psychopédagogique, programme d'accompagnement, démarche motivationnelle, classe inversée, approche par projet, approche par problème.*

**Rezumat.** Prezentul studiu este produsul unei chestionări mai recente referitoare la limitele meseriei de profesor de limbă franceză pentru străini, la ce ar trebui, acesta din urmă, să recurgă atunci când vrea să elaboreze un demers eficient adresat studenților care împrățisează mai anevoios studiile universitare. Or, perioadele de criză didactică nu-i ocolesc nici pe cei cu destulă experiență în domeniu. Ele se justifică prin dorința acestora de a crea noi strategii, fiind vorba, de astă dată, de adoptarea unei pedagogii inovative în

contextul dezvoltării fulminante a noilor tehnologii, unde rolul profesorului este supus unor modificări importante. Această reconsiderare apare deci ca urmare a unor observări de durată și a unei concertări regulate în sânul unei echipe didactice în vederea eficientizării practicilor pedagogice.

**Cuvinte cheie:** *strategie didactică, program de însoțire, demers motivațional, clasă inversată, studiu în bază de proiect, studiu în bază de problemă.*

### **Introduction**

Les jeunes ne veulent plus savoir. C'est le constat qu'on émet le plus souvent dans le domaine de l'éducation. On peut, pourtant, en être fort contrarié, car ceux-ci font preuve de curiosité, même d'une certaine avidité quant à l'information à avaler. Les observations menées auprès des étudiants du premier cycle universitaire nous permettent de constater qu'ils commencent à se désinvestir notamment devant les choses de l'esprit. On atteste, chez eux, l'envie de savoir, d'accéder à la connaissance sans pourtant vouloir apprendre. Savoir, oui; apprendre et penser non. Ils ne veulent pas aller au-delà du voir et de l'entendre pour savoir. Ils ne supportent guère le flottement, le doute, la suspension du jugement qui accompagnent nécessairement toute recherche. Ils vont jusqu'à mettre hors circuit leur fonctionnement mental au moment où il faudra associer, faire des liens, chercher, déduire.

### **Raisons du désinvestissement intellectuel des apprenants**

Cette image simplificatrice et réductrice du fonctionnement intellectuel de nos apprenants risque d'engendrer le défaitisme pédagogique. Il s'en suit que les enseignants devraient se mettre à la recherche d'une solution viable. Or, il est évident que celle-ci n'est pas possible sans connaître les raisons de ce phénomène comportemental. Pour ce faire il nous a paru utile d'aller chez Boimare (2000), dont le raisonnement sur le phénomène en question présente une approche psychopédagogique [1]. Selon lui, la conduite d'évitement de la pensée porte en elle les germes d'une déstabilisation psychique. En effet, toute recherche, toute entrée dans un code nouveau oblige à prendre des distances avec ce qui est perçu directement, en délaissant certains repères. Ce temps de suspension qui devrait être propice à la construction et à la mise en forme provoque la dispersion et la déroute. Ce vide, cette brèche ne peut pas stimuler l'activité de penser. Face à cette situation, les jeunes cherchent à protéger leur équilibre psychique. Pour cela, ils disposent de trois moyens qu'ils utilisent simultanément : ils coupent le fil de la pensée; ils projettent leur peur et leur inquiétude sur le travail à faire, sur l'enseignant; ils utilisent leur corps comme carapace protectrice. «En effet, le travail intellectuel, la réflexion oblige à se pencher sur son intérieur, son psychisme. Or, le désordre extérieur du jeune n'est que le reflet de son désordre interne qui lui fait peur» [2]. Il s'ensuit que toute question intellectuelle le renvoie à des images internes dangereuses qu'il faut fuir pour ne pas s'exposer au danger.

### **Démarche psychopédagogique**

En tant qu'enseignants on se demande, en l'occurrence, quoi faire pour s'en sortir? Comment agir pour ne pas éprouver le sentiment d'impuissance et de culpabilité? On comprend que la capacité de didactiser le matériel ne suffit pas. Il faut avoir une certaine disponibilité psychique qui puisse nous aider à ne pas se laisser manipuler ou à ne pas sombrer dans la démagogie ou le laissez-faire.

Ancrée dans l'approche psychopédagogique sus-évoquée, on dirait avec Boimare que diminuer les causes d'angoisse paraît être l'action prioritaire. Pour ce faire on devrait établir des cadres dans la classe et dans la réflexion. En l'occurrence, une éventuelle structuration de la classe, un certain ordre extérieur va aider à déstructurer le chaos à l'intérieur du jeune.

Le constat que nous venons de faire avec Boimare nous conduit à la nécessité de mettre à jour notre système éducatif fondé sur l'obtention de résultats plutôt que sur le développement des potentiels. Comment faire pour emmener nos apprenants le plus loin possible dans leur apprentissage, ayant la conviction que chaque individu a ses propres ressources? Quelle méthodologie mettre en œuvre pour former des individus autonomes et confiants? Et c'est là que le concept de bienveillance s'impose pour être pleinement analysé. Dans ce contexte on est amené à mettre en cause l'autorité de l'enseignant en tant que tel: il ne doit plus se fonder sur le statut de connaisseur ou détenteur de savoir-faire mais sur sa capacité à susciter la curiosité, à éveiller l'intérêt, à canaliser les efforts vers la réalisation des objectifs ciblés. Et ce qui nous paraît le plus intéressant, attirer les apprenants vers des sujets ou matières qu'il ne maîtrise pas forcément lui-même.

Il s'avère donc important de renouveler notre système éducatif par des programmes d'accompagnement multiples et personnalisés où apprenants et enseignants apprennent les uns des autres. C'est un schéma vertueux, dont on pourrait s'inspirer dans la création de nos méthodes d'apprentissage.

### **Le concept de la pédagogie inversée**

Dans le même ordre d'idées on constate que l'internet transforme, à son tour, l'enseignant dans un simple descripteur du monde, une ressource parmi d'autres. Quelles seraient, dans ce nouveau contexte, les innovations pédagogiques les plus abordables?

Il nous paraît intéressant d'y considérer le concept de la «classe inversée» - une innovation pédagogique, constituant dernièrement l'objet d'études de plusieurs chercheurs dont Dumont et Berthiaume, Nizet et Meyer, Tchatou et Baque, etc. [3 - 5].

Pratiquée surtout aux Etats- Unis, l'innovation en question a réussi à conquérir également les enseignants européens. En effet, l'apprenant regarde la leçon chez lui le soir et le lendemain, le professeur vérifie que la leçon a été assimilée en proposant des exercices d'application, des projets créatifs en équipe. Selon Lebrun (2015), cette forme d'enseignement inverse le travail à distance et le travail en présence: la classe inversée consiste à déplacer la partie magistrale d'un cours à la maison et à utiliser le temps de classe ainsi libéré pour réaliser les devoirs traditionnellement faits à la maison [6]. Cette idée peut être complétée par Dufour (2014) qui précise le caractère des activités à faire à la maison, en autonomie, et en classe: des activités de bas niveau cognitif à la maison et des tâches d'apprentissage de haut niveau cognitif en classe [7].

Il s'avère que la classe inversée arrive à augmenter la volonté d'apprendre, à faire croître l'autonomie chez les apprenants. En plus, ces derniers sont amenés à partager des savoirs et à résoudre des problèmes ensemble. Ce modèle collaboratif que nous sommes en train d'analyser réserve au professeur un nouveau rôle, celui de facilitateur ou guide. Ainsi, on est en train de devenir témoin d'une métamorphose sociétale: d'un monde vertical, hiérarchique où le professeur détenait le savoir absolu à un monde horizontal où les relations se tissent sur le bas, en l'occurrence entre les apprenants eux-mêmes.

On constate néanmoins que certains auteurs tels que Bissonnette et Gauthier (2012) contestent l'efficacité de cette nouvelle méthode d'enseignement vu le manque de données probantes [8]. Par manque de résultats de recherches rigoureuses sur le rendement scolaire en classe inversée, ces auteurs recommandent une attitude de prudence. Pour autant, nous sommes portés à croire à des témoignages individuels comme preuve d'efficacité de cette méthode innovante et nous nous permettons de faire appel à la pédagogie inversée auprès des étudiants universitaires. En effet, le visionnement en autonomie des séquences vidéo rend plus efficace le travail de compréhension orale organisé en classe. Les apprenants participent plus activement à des activités et manifestent un intérêt soutenu pour le sujet en question. De même, les activités de compréhension des écrits, proposées en classe, sont plus efficaces lorsque les documents d'étude sont lus préalablement à la maison. Cela s'explique par le fait que chaque étudiant prend son temps et travaille à son rythme afin de réaliser les mêmes tâches.

### **La dynamique motivationnelle**

Une autre question qui préoccupe les chercheurs œuvrant dans le domaine de la psychopédagogie est la motivation de nos apprenants, dont on atteste une chute considérable. Quelles en pourraient être les raisons? Nous nous réservons la liberté de penser que ce sont des facteurs relatifs aux cours suivis par nos étudiants. En effet, la littérature scientifique évoque, dans ce contexte, les activités pédagogiques, les pratiques évaluatives, la relation avec l'enseignant, le climat de la classe. Briand (2016) fait le point sur la question de la dynamique motivationnelle qui anime un étudiant lorsqu'il accomplit une activité pédagogique. Il évoque trois perceptions qu'un étudiant a de l'activité pédagogique qui lui est proposée:

- a) la perception qu'il a de la *valeur de l'activité*: le jugement qu'un étudiant porte sur l'intérêt et l'utilité d'une activité pédagogique en fonction des buts qu'il poursuit;
- b) la perception qu'il a de *sa compétence*: la perception qu'il a de lui-même et par laquelle il évalue sa capacité à accomplir de manière adéquate une activité qu'il n'est pas certain de réussir;
- c) la perception qu'il a de *la contrôlabilité*: le sentiment de contrôle qu'il exerce sur le déroulement d'une activité et sur ses conséquences [9].

Si ces perceptions sont élevées, l'étudiant sera motivé, ce qui aura pour conséquence qu'il choisira de s'engager cognitivement dans une activité pédagogique qui lui est proposée et persévéra. Si ces perceptions sont faibles, il sera demotivé, ne s'engagera pas dans cette activité et ne persévéra pas.

### **Les innovations pédagogiques les plus abordables**

En partant de l'idée qu'apprendre est une activité complexe, nécessitant un accompagnement humain et technique favorable pour le développement de la compétence, nous nous penchons avec confiance sur la nouvelle conception de l'apprentissage, issue des travaux de la psychologie cognitive et des neurosciences. Cette conception est centrée sur l'apprenant et basée sur les théories de l'activité: l'action, la réflexion et la collaboration avec autrui sont les conditions essentielles à l'efficacité de l'apprentissage. Elle s'appuie sur notre fonctionnement biologique, cognitif, affectif et sur notre nature essentiellement sociale. Restant dans cette optique, on peut évoquer les 6 activités pédagogiques proposées par Briand (2016) et généralement pratiquées par les enseignants: approche par projet, études de cas, approche par problèmes, atelier, séminaire de lecture, exposé [10]. Dans nos

yeux, ce sont des activités susceptibles de stimuler la motivation des apprenants car orientées vers le traitement, la transformation des informations reçues. Or, notamment cette transformation mérite le nom d'apprentissage en tant que processus cognitif et affectif.

Il nous paraît pertinent d'évoquer, également, dans ce contexte, les réflexions des enseignants publiées dans la revue *Pédagogie collégiale* [11], destinée à nous éclairer sur les pratiques novatrices, en alimentant constamment notre réflexion pédagogique: Page M. qui traite de l'apprentissage par problème, Proulx J., abordant l'approche par projet, Gagnon Y-Ch., qui s'approprie l'étude de cas, etc. [12 - 14].

Les activités pédagogiques sus-énoncées nous paraissent d'autant plus pertinentes qu'elles adoptent la méthode inductive, selon laquelle l'expérience doit précéder la compréhension: le goût d'apprendre est à ce prix. Les méthodes inductives veulent partir de la réalité, de l'observation et de l'expérience pour aller vers l'abstraction.

Il est important de préciser aussi que la capacité d'élaboration et de mise en œuvre des activités pédagogiques innovantes se développe non seulement suite à des lectures spécialisées mais aussi grâce à des formations régulières qui puissent améliorer, en un temps bref, la conceptualisation et la rentabilisation de celles-ci.

### Conclusions

Ainsi, nous nous sommes préoccupée, dans un premier temps, des empêchements que les apprenants éprouvent face au processus de l'apprentissage et nous avons constaté que ceux-ci sont plutôt d'ordre psychique: la peur face au déséquilibre créé par l'effort intellectuel, d'une part, et le manque de motivation d'autre part.

La réflexion que nous avons développée par la suite nous a amenées vers l'idée qu'il est important de favoriser la dynamique motivationnelle de nos apprenants, en recourant à des activités innovantes inspirées et rendues possibles par le développement des technologies telles que la classe inversée, l'approche par projet, l'étude de cas, l'approche par problèmes, l'atelier, le séminaire de lecture, l'exposé.

Nous avons voulu démontrer que les activités pédagogiques proposées aux étudiants devraient se baser sur deux principes: la diminution de leur état d'anxiété et le maintien de la motivation tout au long de leurs études. Ces activités doivent influencer de façon positive sur la valeur que les étudiants leur accordent (perception de l'utilité), sur la perception de leur compétence à les accomplir et sur le sentiment de contrôlabilité de leur déroulement.

### Références bibliographiques

1. Boimare S. *L'enfant et la peur d'apprendre*, Dunod, 2000.
2. Boimare S. *La médiation culturelle au secours des enfants empêchés de penser*. 2019.  
Récupéré le 06.02.2021 de <https://www.bayardeducation.com/nos-soutiens-pour-lenseignant/serge-boimare-mediation-culturelle-secours-enfants-empeches-de-penser-autres/>
3. Dumont A. et Berthiaume, D. *La pédagogie inversée : Enseigner autrement dans le supérieur avec la classe inversée*. 2016.  
Récupéré le 08.02.2021 de [https://biblio.helmo.be/opac\\_css/doc\\_num.php?explnum\\_id=4010](https://biblio.helmo.be/opac_css/doc_num.php?explnum_id=4010)
4. Nizet I. et Meyer, F. *La classe inversée : que peut-elle apporter aux enseignants ?* 2015.  
Récupéré le 03.03.2021 de <https://www.reseau-canope.fr/agence-des-usages/la-classe-inversee-que-peut-elle-apporter-aux-enseignants.html>
5. Tchatouo L.P.N., Baque, N. *Pédagogie de la classe inversée : place des outils et ressources numériques dans cette forme d'enseignement*. 2017. Récupéré le 03.03.2021 de <http://www.adjectif.net/spip/spip.php?article427>
6. Lebrun M. *L'hybridation dans l'enseignement supérieur : vers une nouvelle culture de l'évaluation ? Evaluer*. 2015. Récupéré le 19.03.2021 de : [https://www.researchgate.net/publication/272503639\\_L'hybridation\\_dans\\_l'enseignement\\_superieur\\_vers\\_une\\_nouvelle\\_culture\\_de\\_l'evaluation](https://www.researchgate.net/publication/272503639_L'hybridation_dans_l'enseignement_superieur_vers_une_nouvelle_culture_de_l'evaluation)

7. Dufour H. *La Classe Inversée*. 2014. Récupéré le 11.02.21 de: <http://eduscol.education.fr/sti/sites/eduscol.education.fr/sti/files/ressources/techniques/6508/6508-193-p44.pdf>.
8. Bissonnette, S. et Gauthier, C. *Faire la classe à l'endroit ou à l'envers ? Formation et profession*. 2012. Récupéré le 08.02.2021 de [http://formationprofession.com/files/numeros/1/v20\\_n01\\_173.pdf](http://formationprofession.com/files/numeros/1/v20_n01_173.pdf)
9. Briand M. *La motivation des étudiants à l'université: mieux comprendre pour mieux agir*. 2016. recupere le 17.02.2021 de <https://www.innovation-pedagogique.fr/article387.html>
10. *Pédagogie collégiale* :  
Récupéré le 11.03.2021 de <https://eduq.info/xmlui/handle/11515/36?locale-attribute=en>
11. Pagé M. *Quand un problème devient fantastique. Compte rendu d'une expérimentation de l'apprentissage par problèmes dans un cours de littérature*. *Pédagogie collégiale*, 2014, vol.18, nr. 1. Récupéré le 02.03.2021 de [https://cdc.qc.ca/ped\\_coll/pdf/Page\\_18\\_1.pdf](https://cdc.qc.ca/ped_coll/pdf/Page_18_1.pdf)
12. Proulx J. *L'apprentissage par projet*. Presses de l'Université du Québec, 2008.
13. Gagnon Y. Ch. *L'étude de cas comme méthode de recherche*. Presses de l'Université du Québec, 2005.
14. Viau R., Joly J., Bédard D. *La motivation des étudiants en formation des maîtres à l'égard d'activités pédagogiques innovatrices*. *Revue des Sciences de l'Éducation*, 30 (1), 2004.  
Récupéré le 6.02.21 de <https://www.erudit.org/fr/revues/rse/2004-v30-n1-rse962/011775ar.pdf>



[https://doi.org/10.52326/jss.utm.2021.4\(2\).06](https://doi.org/10.52326/jss.utm.2021.4(2).06)  
UDC 546:[378.147:004]



## ORGANIZATION OF THE ONLINE LABORATORY PRACTICUM AT INORGANIC AND ANALYTICAL CHEMISTRY - A POSSIBLE SOLUTION FOR PANDEMIC SITUATION

Iurie Subotin <sup>1</sup>, ORCID ID : 0000-0002-5570-4713,  
Raisa Druță <sup>1</sup>, ORCID ID : 0000-0001-5301-6055,  
Zinaida Chiosa <sup>2</sup>

<sup>1</sup>Technical University of Moldova, Stefan cel Mare 168, Chisinau, Republic of Moldova

<sup>2</sup>Liceum "Da Vinci", Constantin Stamati, 10, Chisinau, Republic of Moldova

\*Corresponding author: Iurie Subotin, [iurie.subotin@ftmia.utm.md](mailto:iurie.subotin@ftmia.utm.md)

Received: 04. 17. 2021

Accepted: 05. 18. 2021

**Abstract.** The article analyzes the possible methods for performing laboratory work in chemistry during a situation of lockdown or pandemic. Laboratory practice is one of the main ways to learn the basics of science. The results of the experiments performed by the students stimulate their thinking, lead them to discussions and lead them to draw conclusions. All this leads to the optimization of the learning process. The use of very simple tools often helps in learning, facilitating the assimilation of the material. If the transfer of knowledge is not done correctly initially, then the subsequent understanding of the material will be more difficult to achieve. In the absence of a strong connection with previously studied topics it will be more difficult for students to think. Students begin to believe that science is difficult to understand, interest is often lost, and knowledge gained during the theoretical course may lose its value. People are naturally curious and always on the lookout, and the lab is a good place to satisfy that curiosity. In the laboratory, students have the opportunity to test their theoretical knowledge, which structures thinking and increases interest in science.

**Keywords:** *education, chemical experiment, inorganic chemistry, virtual laboratory, video sequence.*

**Rezumat.** În articol sunt analizate metodele posibile pentru efectuarea lucrărilor de laborator la chimie în timpul unei situații de blocare sau pandemie. Practica de laborator este una dintre principalele modalități de a învăța elementele de bază ale științelor. Rezultatele experimentelor realizate de elevi le stimulează gândirea, conduc la discuții și îi determină să facă concluzii. Toate acestea conduc la optimizarea procesului de învățare. Utilizarea instrumentelor foarte simple ajută adesea la învățare, facilitând asimilarea materialului. Dacă transferul de cunoștințe nu se face corect inițial, atunci înțelegerea ulterioară a materialului va fi mai dificil de realizat. În absența unei legături puternice cu subiectele studiate anterior va fi mai dificil pentru studenți să gândească. Elevii încep să

creadă că știința este greu de înțeles, deseori interesul este pierdut, iar cunoștințele acumulate în timpul cursului teoretic și-ar putea pierde valoarea. Oamenii sunt curioși în mod natural și sunt mereu în căutare, iar laboratorul este un loc bun pentru a satisface această curiozitate. În laborator studenții au posibilitatea de a-și testa cunoștințele teoretice, care structurează gândirea și crește interesul pentru știință.

**Cuvinte cheie:** *educație, experiment chimic, chimia anorganică, laborator virtual, secvență video.*

### **Introducere**

Procesul instructiv-educativ la disciplina chimie este orientat spre formarea la studenți a unui șir de competențe specifice, precum: a dobândi cunoștințe fundamentale, abilități și valori din domeniul chimiei; a investiga experimental substanțele și procesele chimice; a utiliza inofensiv substanțele chimice; a rezolva probleme/situații-problemă.

Experimentul chimic este o componentă indispensabilă în predarea chimiei și reprezintă o metodă extrem de importantă în stabilirea unei legături temeinice dintre teorie și practică, transformând astfel cunoștințele obținute în convingeri și abilități cognitive. În programa liceală și în programa universitară un rol esențial este rezervat experimentului chimic, în procesul realizării căruia elevii și studenții obțin niște aptitudini de a observa, analiza, propune concluzii, de mânuire cu utilajul și reagenții chimici.

Experimentul chimic permite familiarizarea nu numai cu fenomenele cercetate, dar și cu metodele științifice ale chimiei; sporește atractivitatea disciplinei; formează niște deprinderi și aptitudini practice. În procesul realizării experiențelor studenții însușesc mai temeinic și profund conținuturile disciplinei, obținând deprinderi de lucru sine stătător. Realizând experimentul și notând rezultatele transformărilor chimice observate, studentul se încredințează că procesele chimice pot fi dirijate și se supun unor legități, cunoașterea cărora conduce la confirmarea teoriei în practică, o aplicabilitate clară în activitatea practică.

Metodele de învățare a chimiei în procesul de instruire sunt integrate, din care cauză se analizează utilizarea eficientă a corelării diferitor metode, care sunt determinate de obiectivul didactic, conținutul temei, particularitățile de vârstă, nivelul de pregătire a grupei și alți factori [1, 2]. Un factor determinant în formarea competențelor specifice la chimie este transformarea cunoștințelor teoretice în convingeri praxiologice stabile. Prin experiențele demonstrative de laborator și lucrările practice, organizate atât în cadrul cursurilor, cât și a activităților extra-didactice se creează condițiile necesare pentru formarea la studenți a competenței de investigare teoretică și experimentală [3]. Investigarea experimentală a proprietăților și obținerii substanțelor chimice, studierea acțiunii unor procese chimice asupra omului și mediului relevă necesitatea de a asigura securitatea personală și socială și de a promova modul sănătos de viață. Ca urmare efectuarea experiențelor de laborator și a lucrărilor practice conform instrucțiunilor propuse și respectarea regulilor de securitate asigură suportul pentru utilizarea inofensivă a substanțelor în diverse situații cotidiene.

### **Rezultate și discuții**

Organizarea activităților educaționale în formatul online cu aplicarea tehnologiilor informaționale pentru ultima perioadă nu prezintă o noutate și deja este un mijloc obișnuit de organizare a procesului instructiv-educativ, în special în perioada pandemiei Covid-19 [4]. Însă dacă organizarea și realizarea orelor de curs și seminare nu prezintă dificultăți

majore, atunci efectuarea lucrărilor de laborator de studenți în varianta online cauzează un șir de întrebări la modul de realizare, eficiența activității, crearea deprinderilor practice, etc.

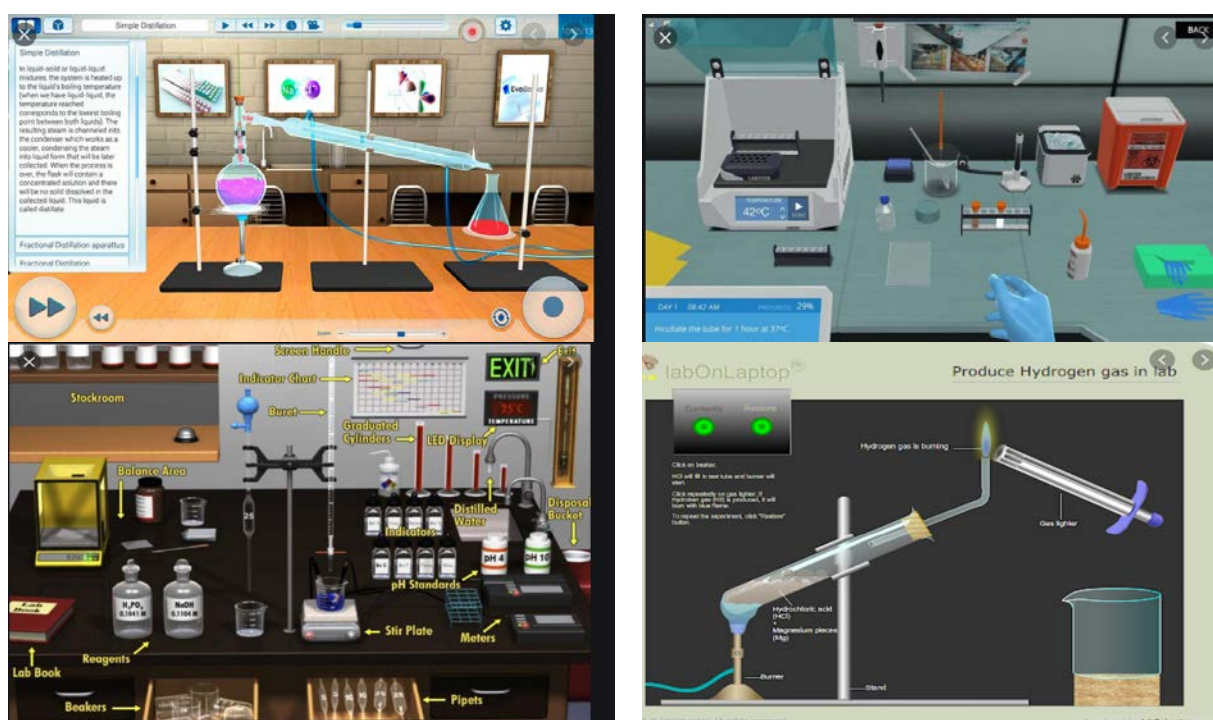
În opinia autorilor, evident, efectuarea online a lucrărilor de laborator la disciplina chimie nu este o soluție echivalentă cu prezența fizică a studenților în laborator. Efectuarea online a lucrărilor de laborator este posibilă pe 2 căi:

- ✓ aplicarea laboratoarelor virtuale [5]
- ✓ utilizarea secvențelor video ale experiențelor corespunzătoare.

Prin intermediul experimentelor virtuale este posibil de a descrie orice situații din viața reală, indiferent de gradul de complexitate și de pericol al acestora. Deoarece sunt simulate pe calculator, procesele pot fi repetate până când sunt înțelese pe deplin. Resursele digitale cuprinse de laboratoarele virtuale sunt atractive și ușor de utilizat de studenți transformând astfel activitatea practică într-o activitate unică și plăcută. În domeniul analizat pot fi evidențiate un șir de portaluri ce permit realizarea experimentului chimic virtual, fie în limba engleză, română, rusă [6 - 11].

Avantajele unui experiment chimic virtual sunt: siguranța, posibilitatea unei activități individuale; perspective ale educației chimice incluzive; posibilitatea efectuării unui experiment în absența fizică a echipamentelor complexe, reactivi inaccesibili, capacitatea de a efectua rapid o serie de experimente cu valori diferite ale parametrilor de intrare; reducerea timpului pentru exersarea abilităților, dobândirea abilității de observare, interpretare a datelor; în același timp, există situații în care utilizarea unui laborator virtual este singura modalitate posibilă efectuarea unui experiment chimic.

Desigur, există unele dezavantaje ale experimentului chimic virtual. Principala este lipsa contactului direct cu instrumentele și echipamentele și, cel mai important, cu obiectul cercetării chimice - o substanță cu un set complex de caracteristici și proprietăți pe care nimeni nu le poate reproduce cel mai perfect model de computer. Evident, combinația optimă va fi utilizarea laboratoarelor naturale și virtuale în procesul educațional, luând în considerare avantajele și dezavantajele lor inerente.



**Figura 1.** Mostre de ustensile și reagenți propuse de laboratorul virtual.

Unul din neajunsuri constă în lipsa vizualizării reale a rezultatelor experimentale (culoarea soluției, precipitatului, gazului eliminat, formarea precipitatului, etc).

O altă posibilitate de efectuare online a lucrărilor de laborator constă fie în utilizarea secvențelor video deja filmate (youtube.com), fie filmarea lor de cadrele didactice. Drept exemplu se propune modalitatea de realizare a lucrării de laborator la chimia anorganică „Reacții de schimb ionic”, care se efectuează de studenții de la toate specialitățile UTM.

Lucrarea practică este formată din 9 experiențe:

1. *Obținerea sărurilor insolubile*
  - a. Obținerea iodurii de plumb (II)
  - b. Obținerea sulfatului de bariu
  - c. Obținerea sulfurii de cupru (II)
2. *Obținerea unui acid insolubil*
3. *Obținerea unui produs de reacție gazos*
  - a. Obținerea oxidului de carbon (IV)
  - b. Obținerea amoniacului
4. *Obținerea bazelor insolubile*
  - a. Obținerea hidroxidului de fier (III)
  - b. Obținerea hidroxidului de cupru (II)
  - c. Obținerea hidroxidului de aluminiu

Pentru realizarea eficientă a lucrării studenților se oferă (pe email) descrierea lucrării de laborator, întrebări pentru pregătire sinestătătoare, template-ul lucrării. Template-ul conține denumirea lucrării; scopul lucrării, utilaje, ustensile și reagenții utilizați, grupa, numele studentului necesită a fi completate de student.

..... Octombrie, 2020	<b>DEPARTAMENTUL OENOLOGIE ȘI CHIMIE</b>
Disciplina <b>CHIMIA ANORGANICĂ</b>	Numele, prenumele studentului _____
Grupa _____	Verificat profesor _____
<b>Lucrare practică</b>	
<b>Tema „Reacții de schimb ionic”</b>	
Scopul:	
Utilaje și reactivi:	
Efectuarea lucrării	

**Figura 2.** Aspectul lucrării de laborator.

Ulterior studentul face cunoștință cu modul de efectuare a fiecărei experiențe, observă spațiile libere necesare pentru plasarea imaginilor din secvența video vizionată, observații, concluzii:

La dispoziția studenților se pune un set de secvențe video. Studenții privesc secvența video ce corespunde experienței [12], selectează imaginile necesare pentru plasare în tabelul respectiv (figura 3), atent privesc rezultatele experimentului și notează observațiile și concluziile. Rezultatele obținute pot avea forma:

**Experiența 1. Obținerea sărurilor insolubile**

**a. Obținerea iodurii de plumb (II)**

Vizionați secvența video nr.1.

Turnați într-o eprubetă 1-2 ml soluție nitrat de plumb (II) și 1-2 ml soluție iodură de potasiu. Observați ce se întâmplă. Notați ecuația reacției în formă moleculară și ionică:

..... EM  
 ..... EIC  
 ..... EIR

Imaginea până la reacție	Imaginea după reacție

Observație .....

Concluzie .....

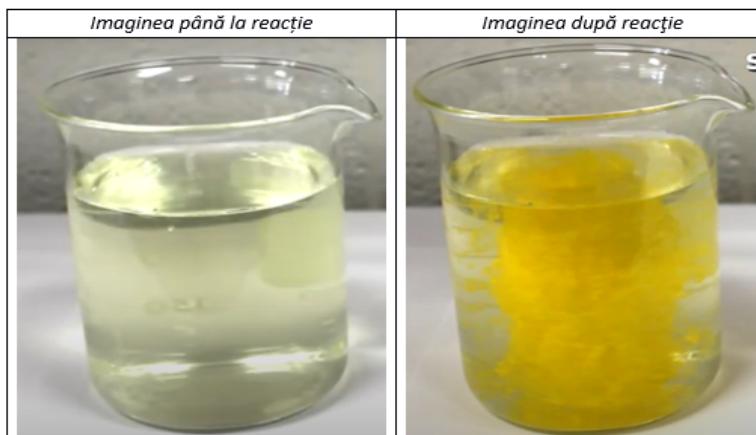
**Figura 3.** Aspectul necompletat a experienței nr. 1a.

**Experiența 1. Obținerea sărurilor insolubile**

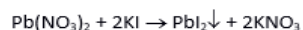
**a. Obținerea iodurii de plumb (II)**

Vizionați secvența video nr.1.

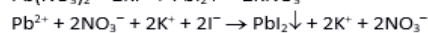
Turnați într-o eprubetă 1-2 ml soluție nitrat de plumb (II) și 1-2 ml soluție iodură de potasiu. Observați ce se întâmplă. Notați ecuația reacției în formă moleculară și ionică:



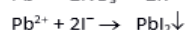
Ecuția reacției:



EM



EIC



EIR

**Observație:** În rezultatul reacției s-a format un precipitat de culoare galbenă.



**Concluzie:** Reacția a decurs între ionul  $Pb^{2+}$  și  $I^-$ .

**Figura 3.** Aspectul completat a experienței nr. 1a.

Analog, se procedează și în experiența 1b – „Obținerea sulfatului de bariu”. Studenții accesează secvența video indicată de profesor în instrucțiune [13] și efectuează toate etapele propuse anterior.

**b. Obținerea sulfatului de bariu**

Turnați într-o eprubetă 1-2 ml soluție clorură de bariu și 1-2 ml soluție sulfat de sodiu. Notați ecuația reacției în formă moleculară și ionică:

Imaginea până la reacție	Imaginea după reacție
	

$$\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 \downarrow + 2\text{NaCl}$$

$$\text{Ba}^{2+} + 2\text{Cl}^- + 2\text{Na}^+ + \text{SO}_4^{2-} \rightarrow \text{BaSO}_4 \downarrow + 2\text{Na}^+ + 2\text{Cl}^-$$

$$\text{Ba}^{2+} + \text{SO}_4^{2-} \rightarrow \text{BaSO}_4 \downarrow$$

**EM**  
**EIC**  
**EIR**

**Observație:** În rezultatul reacției s-a format un precipitat de culoare albă.  
**Concluzie:** Reacția a decurs între ionul  $\text{Ba}^{2+}$  și  $\text{SO}_4^{2-}$ .

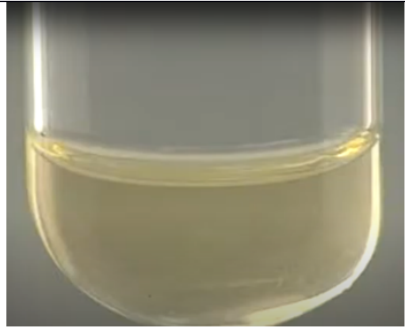
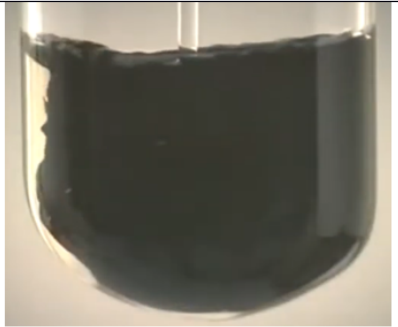
**Figura 4.** Aspectul completat a experienței nr. 1b.

În experiența 1c se demonstrează formarea unei sulfuri insolubile [14]. Toate etapele din experiență sunt identice cu cele anterioare:

..... Octombrie, 2020 DEPARTAMENTUL OENOLOGIE ȘI CHIMIE

**c. Obținerea sulfurii de fier (II)**

Turnați într-o eprubetă 1-2 ml soluție clorură de fier (II) și 1-2 ml soluție sulfură de sodiu. Notați ecuația reacției în formă moleculară și ionică:

Imaginea până la reacție	Imaginea după reacție
	

$$\text{FeCl}_2 + \text{Na}_2\text{S} \rightarrow \text{FeS} \downarrow + 2\text{NaCl}$$

$$\text{Fe}^{2+} + 2\text{Cl}^- + 2\text{Na}^+ + \text{S}^{2-} \rightarrow \text{FeS} \downarrow + 2\text{Na}^+ + 2\text{Cl}^-$$

$$\text{Fe}^{2+} + \text{S}^{2-} \rightarrow \text{FeS} \downarrow$$

**EM**  
**EIC**  
**EIR**

**Observație:** În rezultatul reacției s-a format un precipitat de culoare neagră.  
**Concluzie:** Reacția a decurs între ionul  $\text{Fe}^{2+}$  și  $\text{S}^{2-}$ .

**Figura 4.** Aspectul completat a experienței nr. 1c.



..... septembrie, 2020
DEPARTAMENTUL OENOLOGIE ȘI CHIMIE

Disciplina **CHIMIA ANALITICĂ**

Grupa TPA-201

Numele, prenumele studentului \_\_\_\_\_

Verificat profesor \_\_\_\_\_

**Lucrare practică**

**Tema „Determinarea concentrației de acizi prin metoda de titrare”**

**Scopul:** Determinarea concentrației soluției HCl prin metoda de titrare


**Utilaje și reactivi:** Baloane cotate, pahare chimice, biuretă pentru titrare, soluție titrată NaOH, fenolftaleină, apă distilată

**Modul de efectuare**

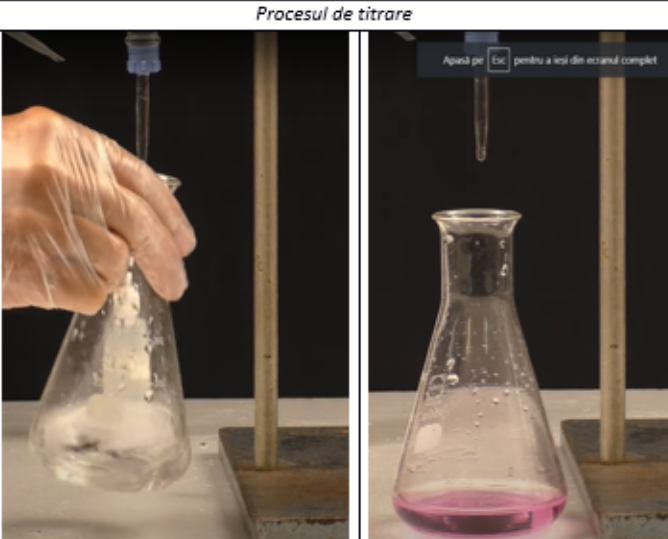
Proba primită de la profesor o cu un conținut necunoscut de acid (HCl, H<sub>2</sub>SO<sub>4</sub>, CH<sub>3</sub>COOH) am transferat cantitativ soluția obținută cu ajutorul unei pâlnii într-un balon cotate de 100 ml și am adus până la cotă cu apă distilată. Cu ajutorul unei pipete am transferat într-un balon cotate pentru titrare 10 ml de acid, am adăugat 2-3 picături de indicator (tipul indicatorului se selectează în funcție de acidul titrat).

Am umplut biureta pentru titrare cu soluția de lucru de NaOH sau KOH și am titrat soluția de acid până la apariția unei colorații slabe, dar stabile timp de 30 sec. Titrarea am executat cel puțin de 3 ori până la obținerea unor rezultate ce variază nu mai mult de 0,1 ml.

*Prepararea soluției HCl*



*Procesul de titrare*



**Calculul conținutului de acid**

Volumul KOH obținut la titrare:

V <sub>1</sub> = 4,7 ml		C <sub>n</sub> (KOH) = 1,0125 mol/l
V <sub>2</sub> = 4,7 ml		
V <sub>3</sub> = 4,8 ml	V <sub>med.</sub> = 4,73 ml	

Titru soluției KOH:

$$T_{\left(\frac{KOH}{HCl}\right)} = \frac{C_n(HCl) \cdot ME(HCl)}{1000} = \frac{1,0125 \cdot 36,5}{1000} = 0,0369 \text{ g/cm}^3$$

Determinăm masa de acid:

$$m(HCl) = T\left(\frac{KOH}{HCl}\right) \cdot V_{med.(KOH)} \cdot \frac{100}{10} = 0,0369 \cdot 4,73 \cdot \frac{100}{10} = 1,7453 \text{ g.}$$

**Concluzie:** În rezultatul efectuării lucrării de laborator am făcut cunoștință cu metoda de titrate acido-bazică și am determinat masa acidului clorhidric în proba propusă.

**Figura 5.** Aspectul completat al lucrării de laborator „Determinarea concentrației de acizi prin metoda de titrare”.

Analog se efectuează și restul experiențelor. Pentru aceasta studenții utilizează link-urile indicate [15, 16, 17, 18, 19, 20].

În final, studentul completează varianta electronica a lucrării de laborator și o transmite pe email profesorului. Profesorul verifică corectitudinea lucrării și în discuția online cu studentul asupra lucrării stabilește nota.

Analog pot fi realizate și alte lucrări de laborator atât la disciplina Chimia anorganică, atât și alte discipline: Chimia analitică, Chimia organică, Chimia fizică.

Un alt exemplu – lucrarea de laborator la disciplina Chimia analitică „Determinarea concentrației de acizi prin metoda de titrare”. Analog, ce propune template-ul lucrării, studenții vizionează secvența video [21, 22] și prezintă lucrarea profesorului.

### Concluzii

În rezultatul analizei bibliografiei și propriilor cercetări considerăm că executarea lucrărilor de laborator în varianta online este posibilă prin aplicarea metodelor digitale moderne. Executarea lucrărilor poate fi realizată atât prin aplicarea laboratoarelor virtuale, cât și prin vizionarea și analiza atentă a secvențelor video corespunzătoare. Evident, modalitatea online de efectuare a lucrărilor de laborator la chimie nu poate înlocui executarea fizică a acestora, însă în condițiile pandemiei și absenței studenților la ore modalitatea poate utilizată fie pentru studenții tuturor profilurilor, fie pentru studenții la care disciplina chimia nu este de profil.

### References

1. Fatu S. Didactica chimiei, Bucuresti, 2007.
2. Cozma D. G., Pui A. Elemente de didactica chimiei, Iasi, Ed. Spiru Haret, 2003.
3. Subotin C., Revenco M., Subotin Iu. Experimentul demonstrativ-distractiv la chimie. Chișinău, Ed. Lumina. 2003.
4. Arroio A. The value of education in the context of Covid-19 pandemic / A. Arroio // Problems of Education in the 21st Century. – 2020. – V. 78(3). – P. 309-313.
5. Subotin Iu., Druță R. Chemical experiment and its importance in teaching chemistry. Journal of Social Sciences, Vol. II, no. 1 (2019), pp. 21-26.

### Surse online:

6. Virtual Chemistry Laboratory Merlot II: <https://www.merlot.org/merlot/viewMaterial.htm?id=89055> [accesat 14.04.2021]
7. Virtual Chemistry: <http://www.chem.ox.ac.uk/vrchemistry/> [accesat 14.04.2021]
8. Virtual Labs: <http://www.vlab.co.in> [accesat 14.04.2021].
9. <http://mmlab.ru/products/chemlab/chemlab.shtml>. [accesat 14.04.2021]
10. VirtualLab (<http://www.virtulab.net>) [accesat 14.04.2021]
11. <http://chemcollective.org/vlabs> [accesat 14.04.2021]
12. <https://www.youtube.com/watch?v=diW7q7RFJBM&t=44s> [accesat 14.04.2021]
13. <https://www.youtube.com/watch?v=ymBbvSpT5RQ> [accesat 14.04.2021]
14. [https://www.youtube.com/watch?v=4ph78d\\_Xpol](https://www.youtube.com/watch?v=4ph78d_Xpol) [accesat 14.04.2021]
15. <https://www.youtube.com/watch?v=3MnKt2X05Pc> [accesat 14.04.2021]
16. [https://www.youtube.com/watch?v=\\_D3Ctx-kwwY](https://www.youtube.com/watch?v=_D3Ctx-kwwY) [accesat 14.04.2021]
17. <https://www.youtube.com/watch?v=LUEakMDNRsM> [accesat 14.04.2021]
18. <https://www.youtube.com/watch?v=u4gmssgY5d8> [accesat 14.04.2021]
19. <https://www.youtube.com/watch?v=FlvinJkn9Tg> [accesat 14.04.2021]
20. <https://www.youtube.com/watch?v=XSfuKRJpULY> [accesat 14.04.2021]
21. <https://www.youtube.com/watch?v=gSauVhYtVIU&t=73s> [accesat 14.04.2021]
22. <https://www.youtube.com/watch?v=QGAPGUbARAM> [accesat 14.04.2021]



[https://doi.org/10.52326/jss.utm.2021.4\(2\).07](https://doi.org/10.52326/jss.utm.2021.4(2).07)  
UDC 811.135.1'373.46



## MODELING CONSTRUCT OF TECHNICAL TERMINOLOGY VALUING IN THE ROMANIAN LANGUAGE BY ALLOPHONE STUDENTS

Mariana Golovaci\*, ORCID ID: 0000-0002-0929-9200

*Technical University of Moldova, Ștefan cel Mare str. 168, Chișinău, Republic of Moldova*

*\*mariana.golovaci@lm.utm.md*

Received: 03. 15. 2021

Accepted: 05. 12. 2021

**Abstract.** The aim of the article is to reflect the theoretical premises in the construction of the specific model of technical terminology exploitation in the Romanian language by allophone students. The theoretical and practical studies devoted to professional languages, mentioned in this paper, have been fundamental elements of the pedagogical model developed for the objective of the research. The models reflected in the Common European Framework of Reference for languages, designed for formative actions, which constitute a privileged opening in supporting the formation of communicative competence in a language other than the mother tongue, served as the basis: Model of development of general individual competences; Model of extension and diversification of linguistic communicative competence; Model of performing the determined communicative activity (-ies); Model of optimal functional insertion in a particular domain; Model of enrichment/diversification of strategies in terms of performing tasks. Communicative competence is a category that reflects the authors' point of view equating communicative competence and terminological competence, element in the reference system of professional and personal training purposes. In conclusion, the modeling construct represented in Figure 3 defines the plan to affirm the coordinates of the methodology for valuing technical terminology in higher education (formative and operational), which will be concretized at the level of performance achieved at graduation integrating the technical terminology into a message for various communication contexts.

**Keywords:** *technical terminology, communication competence, terminological competence, didactic methodology, Pedagogical Model.*

**Rezumat.** Scopul articolului vizează reflectarea premiselor teoretice în construcția Modelului pedagogic de valorificare a terminologiei tehnice în limba română de către studenții alolingvi. Studiile teoretice și practice consacrate limbajelor profesionale, menționate în prezentul articol, au constituit repere de fundamentare ale Modelului pedagogic elaborat în scopul cercetării. Drept bază au servit modelele reflectate în Cadrul european comun de referință pentru limbi, concepute în acțiuni formative, ce constituie o deschidere privilegiată în susținerea formării competenței de comunicare într-o altă limbă decât cea maternă: Modelul de dezvoltare a competențelor generale individuale; Modelul extinderii și diversificării competenței de comunicare lingvistică; Modelul realizării unei

(unor) activități comunicative determinate; Modelul inserării funcționale optimale într-un anumit domeniu; Modelul îmbogățirii/diversificării strategiilor în termeni de îndeplinire a sarcinilor. Competența de comunicare reprezintă o categorie ce reflectă punctul de vedere al autorilor în echivalarea competenței de comunicare și a competenței terminologice, element în sistemul de referință al finalităților de formare profesională și personală. În concluzie, constructul modelic reprezentat în figura 3 definește planul de afirmare a coordonatelor metodologiei de valorificare a terminologiei tehnice în învățământul superior (formativă și operațională), fapt ce va fi concretizat în nivelul de performanță atins la absolvire privind gradul de integrare a terminologiei tehnice într-un mesaj pentru diverse contexte de comunicare.

**Cuvinte-cheie:** *terminologie tehnică, competența de comunicare, competența terminologică, metodologia didactică, Model pedagogic.*

### Introducere

Optimizarea didacticii universitare în scopul dezvoltării competenței de comunicare profesională reprezintă unul din obiectivele de bază a învățământului superior, interesul științific al cercetătorilor fiind concentrat în mare parte pe dezvoltarea la nivel înalt a competenței de utilizare a lexicului specialitate. Perspectiva metodologică a valorificării terminologiei tehnice în limba româna de către studenții alolingvi este argumentată de *terminologia tehnică*, un concept fundamentat teoretic la nivelul *limbajului specializat*, fiind parte a cercetărilor actuale care promovează ideea, că terminologia are ca „obiectiv primordial, asigurarea univocității transferului de cunoștințe între specialiști, relevând capacitatea limbii de a răspunde provocărilor modernității fără intermediari” [1].

Corelată cu principiile terminologiei actuale, valorificarea terminologiei într-o limbă străină „exprimă cultura societății informaționale, globalizată, postmodernă, care solicită cunoașterea limbilor străine ca resursă de „îmbogățire și extindere a propriului spațiu de expresie și reprezentare”; deschidere față de alte sisteme de organizare socială, dar și ca „dimensiune direct responsabilă de integrarea socială a individului și de succesul său profesional” [2], constituind un instrument de eliminare a ambiguității în comunicarea științifică” [3]. Oportunitatea cercetării metodologiei date derivă din preocupările sporite pentru lexicul de specialitate, atestând studii teoretice și practice valoroase realizate în R. Moldova, consacrate limbajelor profesionale din diverse domenii de activitate. Contribuții importante privind *dezvoltarea competenței de lectură a textelor de specialitate în limba germană la profilul științe economice* sunt recunoscute în cercetarea realizată de N. Barbaroș (2018) [4]; *dezvoltarea lexicului de specialitate în limba engleză la studenții economiști*- A. Ixari (2013) [5]; *formarea limbajului scris la studenții facultăților de educație fizică și sport* - M. Timuș; *formarea limbajului profesional la studenții colegiului de medicină* - Botnariuc L. (2007) [6]; *Afixarea în metalimbajul tehnic englez (domeniul tehnicii de telecomunicații)*- Caterenciuc S. [7]. Importanța *limbajului individual al studentului alolingv în limba română* este prezentată prin abordarea implicativă a situației de discurs, D. Usaci (2006) [8], analizând problema particularităților verbale individuale în perspectiva *educației lingvistice a studenților alolingvi în baza limbii române*. Nivelul de însușire a limbii este determinat, în mare parte, de circumstanțele consemnate de situația de discurs și de posibilitățile individuale de acumulare a informațiilor necesare, unde anume situația transformă studentul din subiect-receptor de informații în subiect-locutor activ, energizând potențele sale intelectuale și formându-i noi experiențe de viață și de învățare a limbii [8, p. 3].

### I. Principii de învățare a limbii române de către alolingvi

Contextul de valorificare a terminologiei tehnice în limba româna de către studenții alolingvi reclamă sporit organizarea procesului de formare a lexicului de specialitate după anumite principii și proceduri definite de știința metodelor, aceasta constituind una din problemele cercetării. O altă problemă derivă din contradicțiile semnalate de lipsa unui Model tehnologic ce ar include componentele ce definesc reperele teoretice privind valorificarea terminologiei tehnice în limba româna de către studenții alolingvi. Urmărind îndeplinirea obiectivelor propuse, profesorul optează pentru o anumită manieră de abordare a activității, pentru un model de acțiune cu valoare normativă, ce presupune două componente distincte, dar interdependente: o componentă epistemologică și una metodologică. *Componenta epistemologică* înglobează mecanismele operaționale angajate în activitatea de predare-învățare, în timp ce *componenta metodologică* vizează metodele, procedeele, mijloacele și formele de organizare, capabile să asigure funcționalitatea mecanismelor operaționale.

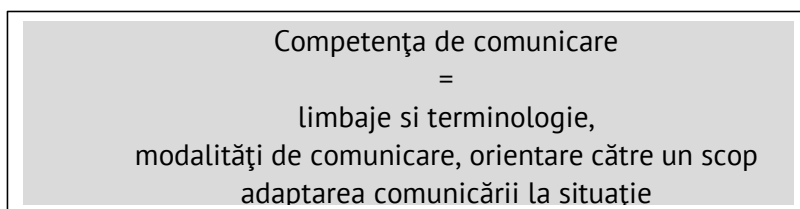
Principiul participării active și conștiente a studenților la propria lor formare stă la baza interesului crescut pentru strategiile ce promovează acel tip de învățare, care este în același timp - *cunoaștere și acțiune*. Poziția intermediară în etapele acestei rezolvări implică faptul că strategiile sunt întotdeauna determinate de context și finalitățile educaționale. În același timp, strategiile stabilesc o modalitate clară de rezolvare, epuizând, din punct de vedere practic, partea euristică, creativă a rezolvării, fapt ce vom demonstra prin intermediul cercetării la nivelul sistemului de tranzacții conceptuale perspectivele de valorificare a terminologiei tehnice în limba româna de către studenții alolingvi.

Despre realitatea procesului de învățământ, modul în care este realizat, preponderent în manieră clasică, E. Joița afirmă din rezultatele cercetărilor și întreprinderilor asupra predării - învățării acumulate în ultimile decenii, că acestea pătrund cu dificultate în literatura și practica pedagogică românească din multiple motive” [9, p. 21].

Activitățile de învățare derulate după modelele constructiviste cercetate de autoare, solicită coordonarea tuturor structurilor personalității (cognitiv, afectiv, motivațional, volitiv, atitudinal, aptitudinal). Fiind un demers centrat pe elev, în activitățile de învățare constructivistă cei implicați pot să întâmpine dificultăți la suprasolicitare sau la evaluări greșite datorate unor interpretări calitative subiective, totdată, E. Joița consideră că „realizarea activității de învățare poate fi obstrucționată și de factori externi acesteia, conjuncturali, circumstanțiali, de o anumită structură mentală a societății, de tipul de experiență a elevilor, dar și a profesorilor care îndrumă activitatea de învățare” [9, p. 25].

Comparația între orientarea constructivistă conturată în ultimele decenii și practicile behavioriste determinate de modelarea comportamentului din informațiile organizate în sisteme pentru a fi ușor manipulate, este prezentată de E. Joița în planul punctelor tari și a punctelor slabe cu referire la elevi și la profesori. În procesul de stabilire a metodologiei valorificării terminologiei tehnice în limba româna de către studenții alolingvi, această comparație reprezintă un suport important privind modul de proiectare și a rezultatelor realizării obiectivelor.

O opinie interesantă în definirea competenței privind operarea cu termenii de specialitate în comunicare este susținută de autorii volumului *Instruirea centrată pe competențe. Cercetare - Inovare - Formare - Dezvoltare*, Mândruț O., Catană L., Mândruț M. [10, p. 31].



**Figura 1.** Incursiuni în afirmarea competenței terminologice  
(după Mândruț O., Catană L., Mândruț M. [10, p. 31].

Competența de comunicare reprezintă o categorie esențială într-o lume globală, în absența căreia nu se poate construi nici cunoaștere/ învățare, nici relaționare. Este un element cheie pentru reușita persoanei în situații de viață, în familie, în timpul liber etc. și pentru dezvoltarea altor competențe cheie.

Această definiție exprimă punctul de vedere a autorilor prin care *echivalează competența de comunicare și competența terminologică* prin sensul grafic al parantezelor ce redau sensul de “a izola o precizare” – notă din DEX și a interpretărilor susținute de argumentele analizate ulterior.

Afirmațiile prezentate cu privire la competența de comunicare sunt evidențiate de *pluridimensionalismul comunicării și a competenței de comunicare*:

- *în limba maternă*, prin cunoașterea și utilizarea limbii materne în situații diverse, în scris sau oral, alt aspect este o atitudine ce constă în dorința de a interacționa cunoscând elementele de interculturalitate. Această competență este definită prin caracteristica sa de evoluție continuă atât în mediul familial, în școală, în mediile profesionale sau în timpul liber.

- *în limbi străine*, prin capacitatea de a înțelege, exprima și interpreta concepte, gânduri, sentimente, fapte și opinii oral sau în scris (ascultare, vorbire, citire și scriere), într-un număr corespunzător de contexte sociale și culturale (în educație și formare, la muncă, acasă și timp liber), în acord cu o dorință sau necesitate.

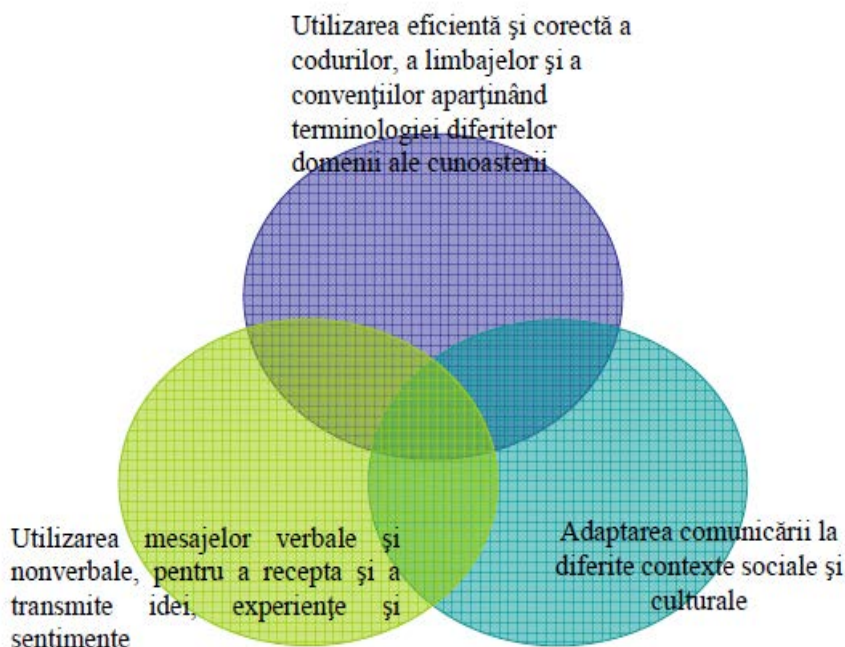
În viziunea autorilor **competența de comunicare în limba maternă** este alcătuită dintr-un ansamblu de elemente componente, referitoare la:

- utilizarea limbajului ca instrument de comunicare orală și scrisă;
- reprezentarea, interpretarea și înțelegerea realității utilizând ca instrument limba;
- receptarea și comunicarea cunoștințelor;
- organizarea și orientarea sau modelarea gândirii și a comportamentelor.

Aceasta reflectă *capacitatea de a exprima și de a interpreta concepte, convingeri, sentimente și opinii, atât oral, cât și în scris; dar și disponibilitatea de a interacționa cu alții într-un mod adecvat și creativ.*

**Competența de comunicare în limbi străine** variază între cele patru dimensiuni (ascultare, vorbire, citire și scriere) ca nivel de competență individual, pentru fiecare limbă străină în parte, în funcție de fondul social și cultural personal, solicitând, de asemenea, aptitudini cum ar fi medierea și înțelegerea interculturală [11, p. 31].

Un alt argument prezentat de autori vizează “*elementele componente ale competenței de comunicare*”. Legătură între tipurile principale de activități (presupuse de această competență) și activitățile de învățare corespunzătoare sunt inserate de autorii menționați într-un tabel, elaborate pe baza operațiilor la nivel de *cunoaștere, înțelegere, argumentare, luarea deciziei, rezolvare de probleme, acțiune, producerea inovației, evaluare critică*.



**Figura 2.** Expresia grafică a competenței de comunicare (după Mândruț [10, p. 31].

Această dimensionare reflectă taxonomia domeniului cognitiv elaborată de B.S. Bloom, ce se constituie drept cadru de referință posibil de adaptat la structura particulară a disciplinelor de învățământ. “A proiecta obiectivele conform acestei taxonomii înseamnă a lua în considerare dimensiunile informativă și formativă a educației și a specifica comportamente cognitive adecvate pentru fiecare clasă de obiective (în total 6 criterii). Pentru fiecare categorie taxonomică sunt indicate tipuri reprezentative de obiective. De exemplu, înțelegerea presupune: reformularea unui enunț de către elev/student cu propriile cuvinte, interpretarea (rezumarea, comentarea etc.) și extrapolarea (specifică consecințelor unui enunț dincolo de context sau cadru de prezentare)”.

Ajustarea tabelului elaborat de autorii volumului *Instruirea centrată pe competențe. Cercetare – Inovare – Formare – Dezvoltare* (Mândruț O., Catană L., Mândruț M.) la taxonomia domeniului cognitiv (B.S. Bloom) este redată în cercetarea de față în tabelul ce urmează:

*Tabelul 1*

### Abordarea competenței de comunicare (terminologice) în planul obiectivelor cognitive

COMPETENTE VIZATE (după Cristea S.)		Competența de comunicare (după Mândruț O., Catană L., Mândruț M)
1. <i>cunoastere</i> (date, termeni, clasificări, metode, teorii, categorii)	<i>cunoastem</i>	- identificăm termeni - memorăm termeni noi
2. <i>înțelegere</i> /capacitatea de raportare a noilor cunoștințe la cunoștințele anterioare prin:	<i>înțelegem</i>	- utilizăm limbajul ca un instrument pentru construirea cunoașterii individuale - înțelegem mesaje : cerințe, scopuri, opțiuni etc.
<ul style="list-style-type: none"> <li>• traducere</li> <li>• interpretare</li> <li>• extrapolare</li> </ul>		

3. aplicare (a noilor cunoștințe)	<i>argumentăm</i>	<ul style="list-style-type: none"> <li>- generăm opinii diverse în legătură cu o situație, cu o metodă utilizată cu o rezolvare propusă etc.</li> <li>- aplicăm etape sau scheme de argumentare a poziției adoptate față de o problemă cu scopul de a convinge</li> </ul>
4. analiza pentru: <ul style="list-style-type: none"> <li>• căutarea elementelor</li> <li>• căutarea relațiilor</li> <li>• căutarea principiilor de organizare</li> </ul>	<i>acționăm</i>	<ul style="list-style-type: none"> <li>- formulăm comenzi care orientează acțiunea individului</li> <li>- organizăm și coordonăm activitatea unui grup</li> <li>- utilizăm terminologii specifice</li> <li>- alegem metode și formulăm ipoteze</li> </ul>
	<i>rezolvăm probleme</i>	<ul style="list-style-type: none"> <li>- căutăm și comunicăm soluții atipice, căutăm rezolvări pentru cazuri particulare, pentru generalizări</li> <li>- rezolvăm un conflict</li> <li>- împărtășim valori comune</li> <li>- inițiem o acțiune – finalizarea acțiunii</li> <li>- dăm feedback, realizăm aprecieri</li> </ul>
5. sinteza pentru: <ul style="list-style-type: none"> <li>• crearea unei opere personale</li> <li>• elaborarea unui plan de acțiune</li> <li>• derivarea unor relații abstracte dintr-un ansamblu</li> </ul>	<i>luăm o decizie</i>	<ul style="list-style-type: none"> <li>- propunem soluții pentru o problemă</li> <li>- apreciem avantajele și limitele soluțiilor</li> <li>- luăm decizii rapide, căutăm să fim eficienți</li> </ul>
	<i>producem inovare</i>	<ul style="list-style-type: none"> <li>- producem texte personale</li> <li>-utilizăm limbajul pentru comunicarea unor idei inovative</li> </ul>
6. evaluarea prin: <ul style="list-style-type: none"> <li>• critica internă</li> <li>• critica externă</li> </ul>	<i>evaluăm critic</i>	<ul style="list-style-type: none"> <li>- realizăm aprecieri</li> <li>- argumentăm părerile personale</li> </ul>

Învățarea limbilor presupune alegerea între diferite tipuri și niveluri de obiective. *Cadrul de referință* reflectă *cinci modele de predare-învățare* și modul cum fiecare dintre componentele esențiale ale modelului poate să se focalizeze asupra obiectivelor de învățare:

1. dezvoltare a competențelor generale individuale ale elevului
2. extindere și de diversificare a competenței de comunicare lingvistică
3. realizări a unei (unor) activități comunicative determinate
4. inserare funcțională optimală într-un anumit domeniu
5. îmbogățire sau diversificare a strategiilor sau în termeni de îndeplinire a sarcinilor

Modelele reflectate în *Cadrul de referință* se referă la diverse categorii de obiective ale predării/învățării, care pot fi concepute în acțiuni formative, constituind o deschidere

privilegiată în susținerea formării competenței de comunicare într-o altă limbă decât cea maternă. Prezentăm în continuare sinteza acestor modele din Cadrul european comun de referință pentru limbi: învățare, predare, evaluare, în condițiile determinării asupra elementelor concepute.

## II. Modelul valorificării terminologiei tehnice în limba română de către alolingvi

**1. Modelul de dezvoltare a competențelor generale individuale** (vezi Secțiunea 5.1), obiectivele se referă la **cunoștințe**, **deprinderi** (capacități), **competența existențială** (trăsături de personalitate, atitudini etc.) sau **capacitatea de a învăța**, ori la una din aceste dimensiuni în mod particular.

Acest model aduce în atenție mai multe situații de învățare a unei limbi străine [11, p. 111]:

- înzestrarea cu noi *cunoștințe declarative* (de exemplu, despre gramatică sau literatură sau despre anumite caracteristici culturale ale unei țări străine);
- învățarea ca mijloc de *dezvoltare a personalității* (de exemplu, pentru mai multă siguranță sau încredere în sine, pentru o atitudine mai degajată față de luările de cuvânt):
  - *dezvoltarea capacității de a învăța* (o mai mare deschidere pentru tot ce e nou, conștientizarea altor limbi și culturi, curiozitatea față de necunoscut).

Aceste scopuri specifice care se referă la un anumit sector sau tip de competență, la aplicarea sau dezvoltarea unei competențe parțiale, permit dezvoltarea sau consolidarea unei competențe plurilingve și pluriculturale transversale. Cu alte cuvinte, autorii PÎE consideră, că urmărirea unui obiectiv parțial își poate avea locul într-un proiect global de învățare.

**2. Modelul extinderii și diversificării competenței de comunicare lingvistică** vizează (vezi Secțiunea 5.2), obiectivele definite de 3 componente:

- **componenta lingvistică**,
- **componenta pragmatică**,
- **componenta socio-lingvistică**.

Învățarea unei limbi străine în baza *Modelului extinderii și diversificării competenței de comunicare lingvistică* este organizată prin construirea elementelor de învățare fie de toate trei la un loc sau fiecare în parte.

Așadar, Cadrul PÎE specifică următoarele variante de învățare:

- asigurarea componentei lingvistice a unei limbi străine (cunoașterea sistemului fonetic, a vocabularului și a sintaxei acestei limbi), fără a se preocupa de finețea socio-lingvistică sau de eficacitatea pragmatică.

- asigurarea componentei pragmatice, care să corespundă capacității de a comunica în limba străină cu mijloace lingvistice limitate, fără să se acorde prea multă atenție pertinentei socio-lingvistice.

- asigurarea componentei socio-lingvistice, care insistă asupra unor norme socio-lingvistice (formule de adresare, eventual folosirea persoanei a treia etc.) sau asupra anumitor norme comportamentale (discreție de bonton, afabilitate, răbdare etc.);

- armonizarea componentelor în una prin exemple de obiective orientate spre una sau alta dintre componentele competenței de comunicare lingvistică, fiind cea concepută ca o competență plurilingvă și pluriculturală, ce prezintă un tot întreg (comportând adică mai multe varietăți ale limbii materne și varietăți ale uneia sau mai multor limbi străine).

**3. Modelul realizării unei (unor) activități comunicative determinate** (vezi Secțiunea 4.4), obiectivele se referă la **recepție, producere, interacțiune sau mediere**.

La fel, ca în modelul precedent activitățile comunicative determinate din acest model (recepție, producere, interacțiune sau mediere) pot fi *organizate independent* (de ex. obținerea unor rezultate efective în activitățile de recepție prin citire sau audiere; rezultate obținute într-o activitate de mediere prin traducere sau interpretare) sau *simultan*, acordând o atenție deosebită interacțiunii în cadrul comunicării „față în față”.

Explicațiile aduse de Cadrul PÎE cu privire la efectuarea învățării în baza acestui model, dau de înțeles, că nu se poate vorbi despre “polarizări absolute, în totală izolare față de alte scopuri. Totuși, atunci când sunt definite obiectivele, este posibil ca o anumită dimensiune să fie pusă în prim plan cu fermitate, urmând ca această prioritate majoră să influențeze, cu condiția că este coerentă, întregul dispozitiv de învățare; alegerea conținutului și a sarcinilor învățării, determinarea structurii progresului și a modalităților posibile de remediere, selectarea tipurilor de texte etc. [11, p. 112].

**4. Modelul inserării funcționale optime într-un anumit domeniu** (vezi Secțiunea 4.1.1), vizează obiectivele privind învățarea unei limbi străine cu referire la diverse domenii de activitate: **public, profesional, educațional, personal etc.**

Acest model are ca obiectiv principal „o mai bună adaptare la cerințele unui post de lucru sau la contextul unei instruirii sau la anumite condiții ale vieții cotidiene într-o țară străină”. Cadrul PÎE recomandă integrarea (infuzarea) obiectivelor de învățare a unei limbi străine în “propunerile de curs, în cererile și ofertele în materie de instruire, în materialele didactice publicate”. Strategiile de realizare a acestor activități sunt definite de următoarele forme:

- „obiective specifice”;
- „cursuri de limbă de specialitate”,
- „cursuri de limbă pentru diferite profesii”,
- „pregătirea pentru șederea în străinătate”,
- „cursuri de limbă pentru muncitorii migratori”.

Ca și în cazul celorlalte componente, această formă de obiectiv de inserare funcțională într-un domeniu corespunde și situațiilor de învățământ bilingv, de imersiune și de profesionalizare într-o limbă diferită de cea vorbită în familie. Din acest punct de vedere, “în afara oricărui paradox în interiorul analizei de față, aceste situații de imersiune, de altfel, indiferent de rezultatele lingvistice la care acestea permit să se ajungă, vizează dezvoltarea unor competențe parțiale: acelea care se potrivesc domeniului educațional și însușirii unor cunoștințe disciplinare altele decât cele lingvistice”, subliniază autorii Cadrului european [11, p. 12].

**5. Modelul îmbogățirii/diversificării strategiilor în termeni de îndeplinire a sarcinilor**, se referă la **operaționalizarea acțiunilor** privind utilizarea sau învățarea uneia sau mai multor limbi, de **descoperirea** sau de **experiența altor culturi**. În acest model, obiectivul este orientat spre îndeplinirea unor sarcini pentru care ele nu fuseseră mobilizate inițial, ridicându-le gradul de complexitate, mobilizarea competențelor de care dispune pentru a le pune în aplicare și poate pentru a le consolida sau lărgi.

Opțiunile metodologice pentru predarea și învățarea limbilor reflectate în *Cadrul european comun de referință pentru limbi* au pus la dispoziție modele de utilizare a limbii „cât se poate de complete, atrăgând atenția, de-a lungul întregului parcurs, asupra *pertinenței*



diferitelor componente ale modelului de învățare, predare și evaluare”. Această conveniență a fost considerată esențialmente în termeni de conținut și obiective ale învățării, fiind expuse pe scurt în secțiunile 6.1 și 6.2. ale ediției prin următoarele conținuturi: obiectivele învățării; gestionarea flexibilă a progresului; competența plurilingvă și pluriculturală; variația obiectivelor în raport cu cadrul de referință și operațiile de învățare a limbilor [11, p. 108 - 114].

Faptul, că metodologia didactică, are ca prioritate „caracteristicile operaționale ale metodelor”, iar funcțiile specifice evidențiază valoarea acestora în calitate de „modele pedagogice”, situate la diferite „poluri” de referință, [12]. Cadrul european comun de referință pentru limbi sugerează modelul de utilizare a limbii la nivelul pertinentei diferitelor componente ale modelului de învățare, predare și evaluare [11, p. 108 - 114], este argumentată elaborarea unui model tehnologic de susținere a metodologiei de *valorificare a terminologiei tehnice în limba româna de către studenții alolingvi*.

Afirmațiile despre oportunitatea structurării unui conținut, demonstrează, că “oricât de oportun ar fi, acesta va înregistra întotdeauna un decalaj între ceea ce este nou și ceea ce se oferă realmente subiecților în procesul de învățare”. C. Cucos pledează pentru ca în cadrul conținutului învățământului, se fie realizat un “optimum între ceea ce este constant și general în cunoaștere și ceea ce este perisabil și efemer”, absolut relevant contextului de dezvoltare a terminologiei.

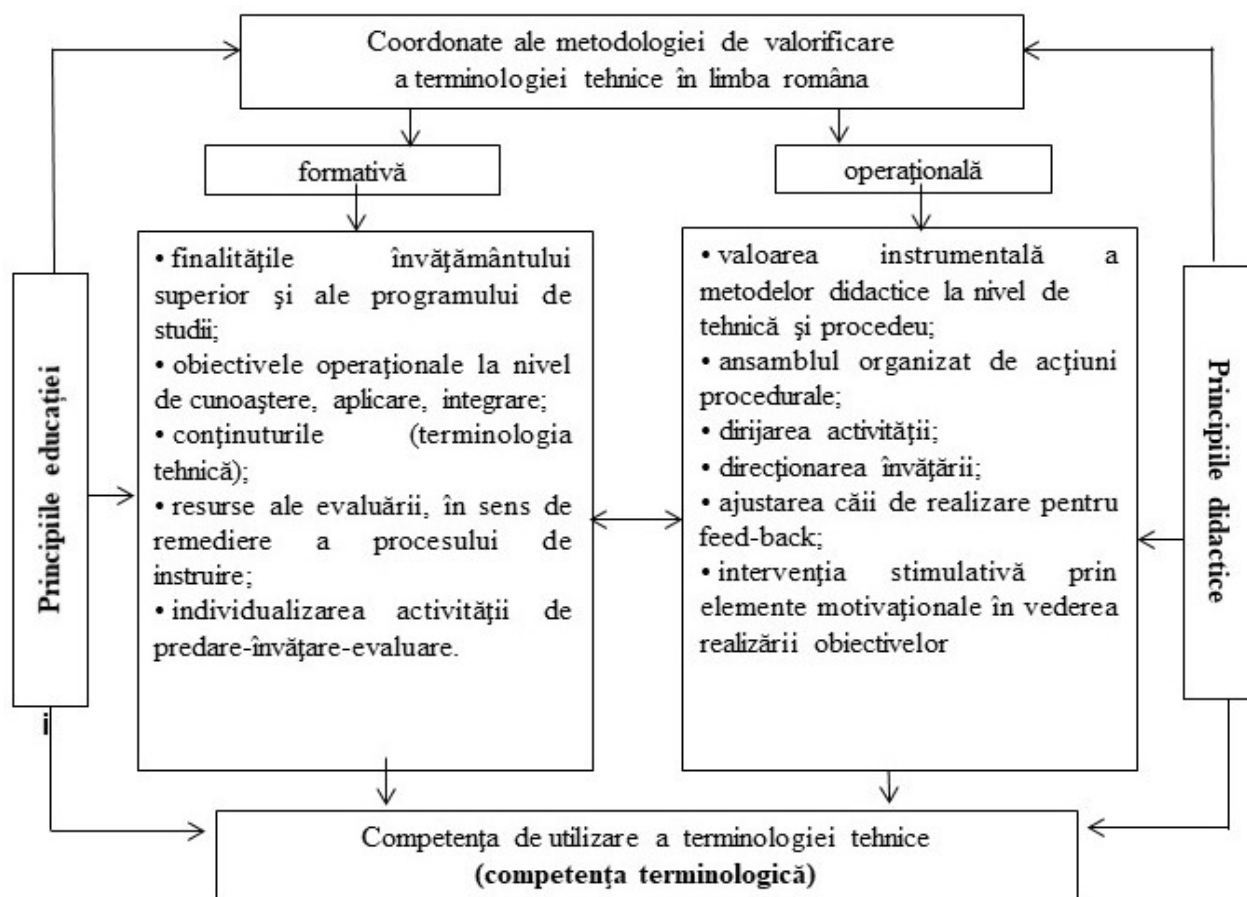
“Centrarea conținuturilor spre codurile de referință și cele de interpretare (concepte, metodologii, teorii) asigură acestora perenitate și consistență. Fixarea în conținuturi a unor elemente conjuncturale asigură acestora un caracter adecvat, aplicabilitate și eficiență. Găsirea unui echilibru între cele două componente este o sarcină atât a factorilor de decizie, cât și a educatorilor”, subliniază C. Cucos [13].

Urmărind scopul de elaborare, stabilire și aplicare a metodelor, **Modelul pedagogic** care imprimă caracter operațional al *metodologiei de valorificare a terminologiei tehnice în limba româna* conjugă „polul psihologic” (S. Cristea) al activității de predare-învățare-evaluare, caracteristic funcției formative a metodelor didactice, cu „polul praxiologic” (S. Cristea) al activității de predare-învățare-evaluare din caracteristicile funcției operaționale a metodelor didactice.

Evident, afirmarea coordonatelor metodologiei de valorificare a terminologiei tehnice în învățământul superior este asigurată de politicile instituționale, solicitate de a răspunde beneficiarilor-absolvenți prin abordările și principiile generale puse în aplicare. „Digitalizarea și extinderea tehnologiilor informaționale și comunicaționale a generat schimbarea paradigmei de cunoaștere și de formare a competențelor, iar provocările politice/economice determină noi valențe și oportunități educaționale, precum ar fi: educația pe parcursul întregii vieți, educația pentru toți și pentru fiecare, dezvoltarea integrală și integră a personalității, educația centrată pe cel ce învață etc., aspecte subliniate de autorii Cadrului de referință al curriculumului universitar [14, p. 5].

Metodologia de valorificare a terminologiei tehnice în *limba româna de către studenții alolingvi* este parte integrantă a dezvoltării curriculumului universitar ca „paradigmă și model de proiectare a formării profesionale inițiale și continue” și ca proces integrat în contextul social-economic național și internațional. „Procesul de predare-învățare-evaluare se desfășoară conform metodologiei și normelor de calitate, având în vedere următoarele componente: curricula și proiectarea didactică, managementul procesului de predare-învățare-evaluare; strategia de predare, resursele de învățare; stagiile de practică și

evaluările finale”. Competențele devin un nou sistem de referință al finalităților de formare profesională și personală, iar conținuturile - mijlocul de formare a acestor competențe, racordate la necesitățile pieții muncii [14, p. 12].



**Figura 3.** Coordonatele Modelului pedagogic privind metodologia de valorificare a terminologiei tehnice în învățământul superior.

Conform *principiului metodologic fundamental al Consiliului Europei*, metodele care trebuie aplicate în învățare, predare și cercetare sunt cele care sunt considerate cele mai eficiente pentru atingerea obiectivelor stabilite în funcție de subiecții vizați în procesul de învățare sau formare. Eficacitatea este subordonată motivațiilor și caracteristicilor subiecților, precum și naturii resurselor umane și materiale la care se poate recurge” [15, 16].

### Concluzii

Concluzia rezumată privind planul operațional al constructului modelic de valorificare a terminologiei tehnice în limba română de către studenții alolingvi este definită de finalitatea procesului de formare a competențelor în cadrul programelor de studii din învățământul superior tehnic, concretizat în nivelul de performanță atins la absolvire.

Metodologia de valorificare a terminologiei tehnice în limba română de către studenții alolingvi este direct susținută de calitatea procesului de formare a competențelor în cadrul programelor de studii din învățământul superior tehnic, asigurând condiții de dezvoltare pentru *integrarea terminologiei tehnice în diverse contexte de comunicare în limba română*.

**Bibliografie**

1. Grand Dictionnaire Terminologique. <http://www.oqlf.gouv.qc.ca/> (vizitat 12.11.2020).
2. Avramescu A. Dicționar cronologic al științei și tehnicii universale. București: Ed. Științifică și Enciclopedie, 1979. 813 p.
3. Bahnaru V. (red. resp.). Lexicologia practică a limbii române. Chișinău: Î.E.P. Știința, 2013. 490 p. ISBN 978-9975-4460-4-4
4. Barbaroș N. Dezvoltarea competenței de lectură a textelor de specialitate în limba germană (la profilul științe economice): autoref. al tezei de doct. În pedagogie. Chișinău, 2019. 30 p.
5. Ixari A. Tehnologia dezvoltării lexicului de specialitate în limba engleză la studenții economiști. Autoreferatul tezei de doctor în pedagogie. Chișinău, 2013. 31 p.
6. Botnariuc L. Formarea limbajului profesional la studenții colegiului de medicină. Teză de doctor în pedagogie, Chișinău, 2007
7. Caterenciuc S. Clasificări structurale ale termenilor din domeniul telecomunicațiilor Studia Universitatis Moldaviae, 2018, nr. 4 (114) Seria "Științe umanistice" ISSN 1811-2668 ISSN, p.17-21
8. Usaci D. Dezvoltarea limbajului individual al studenților alolingvi în baza situației de discurs". Chișinău, 2006. 172 p.
9. Joița E. Profesorul si alternative constructivistă a instruirii. Material – suport pedagogic pentru studenții – viitori profesori [https://docgo.net/view-doc.html?utm\\_source=23186428-profesorul-si-alternativa-constructivista-a-instruirii-pdf](https://docgo.net/view-doc.html?utm_source=23186428-profesorul-si-alternativa-constructivista-a-instruirii-pdf) (vizitat 07.06.2020).
10. Mândruț O., Catană L., Mândruț M. Instruirea centrată pe competențe. Cercetare – Inovare – Formare – Dezvoltare. Arad, "Vasile Goldiș" University Press, 2012. 145 p. ISBN: 978-973-664-538-9
11. Cadrul European comun de referință pentru limbi: învățare, predare, evaluare. trad. din l. fr. de Gheorghe Moldovanu. Chișinău: F.E.-P. Tipografia Centrală, 2003. 204 p. ISBN 9975-78-259-0
12. Cristea S. Dicționar de termeni pedagogici. București: EDP, R.A., 1998, p. 302. ISBN 973-30-5130-6
13. Cucoș C. Pedagogie. Iași: Polirom, 1996. 230 p. ISBN: 973-9248-03-9
14. Cadrul de referință al curriculumului universitar (coord.: Vladimir Guțu). Chișinău: CEP USM, 2015. –128 p. ISBN 978-9975-71-689-5
15. Bidu-Vrănceanu A. (coord.). (2012 b). Terminologie și terminologii (II). București: Editura Universității din București, 2012. 248 p. ISBN 978-606-16-0095-3
16. Ciobanu G. Elemente de terminologie. Timișoara: Editura Mirton, 1998. 160 p.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).08](https://doi.org/10.52326/jss.utm.2021.4(2).08)

UDC 005.334:658.1



## HOW COSO ERM AND SHIMODEL ALGORITHM CAN CONTRIBUTE TO THE DEVELOPMENT OF ENTERPRISE PERFORMANCE

Hezi Aviram Shayb<sup>1,2\*</sup>, ORCID ID 0000-0003-1561-987X

<sup>1</sup>Israel Vehicle Importers Association, 76 Menachem Begin Road, Tel Aviv, Israel

<sup>2</sup>Technical University of Moldova, Chisinau, Republic of Moldova

\*shaybhezi@gmail.com

Received: 04.25.2021

Accepted: 05.18.2021

**Abstract.** Based on theoretical model (COSO ERM), I developed a tool that companies can use to correctly identify the risks they were exposed to, to prevent operational crises in due time, as there is no such a tool publicly available for companies to use. The objective was to offer a solution for all kind of organizations for the problem of correctly identifying and mitigating operational risk exposure, to consolidate their position and be able to prevent organizational crises. This is particularly important as it seems that a “permanentizing of crises” has occurred in the business environment. Compared to the other tools existing in the field of risk management, available to the public use, the mathematical algorithm is offering specific instructions for the managers to use, not just theoretical guidelines. Also, the tool offers a unique feature of being able to be applied for any kind of business organization, from any kind of business field, due to its capacity to adapt to the specificities of every enterprise. Meanwhile, while it seems to be very practical, it is based on a right theoretical framework, supported by the complexity theory.

**Key words:** *Crisis management, SHIModel, COSO ERM, action plan, assessment of risks, Business Results Cube, Financial Results Cube, Operational Key Status Cube.*

**Rezumat.** Pe baza modelului teoretic (COSO ERM) am dezvoltat un instrument pe care companiile îl pot utiliza pentru a identifica corect riscurile la care au fost expuși, pentru a preveni crizele operaționale în timp util, deoarece nu există un astfel de instrument disponibil public pentru companii. Obiectivul a fost de a oferi o soluție pentru toate tipurile de organizații pentru problema identificării și atenuării corecte a expunerii la risc operațional, pentru consolidarea poziției lor și pentru a putea preveni crizele organizaționale. Acest lucru este deosebit de important, deoarece se pare că s-a produs o „permanentizare a crizelor” în mediul de afaceri. Comparativ cu celelalte instrumente existente în domeniul gestionării riscurilor, disponibile pentru utilizarea publică, algoritmul matematic oferă instrucțiuni specifice pentru managerii de utilizare, nu doar îndrumări teoretice. De asemenea, instrumentul oferă o caracteristică unică de a putea fi aplicat pentru orice tip de organizație de afaceri, din orice tip de domeniu de afaceri, datorită capacității sale de a se adapta la specificul fiecărei întreprinderi. Între timp, deși pare a fi foarte practic, se bazează pe un cadru teoretic corect, susținut de teoria complexității.

**Cuvinte cheie:** *Managementul crizelor, SHIModel, COSO ERM, plan de acțiune, evaluarea riscurilor, Cubul rezultatelor afacerii, Cubul rezultatelor financiare, Cubul stării operaționale.*

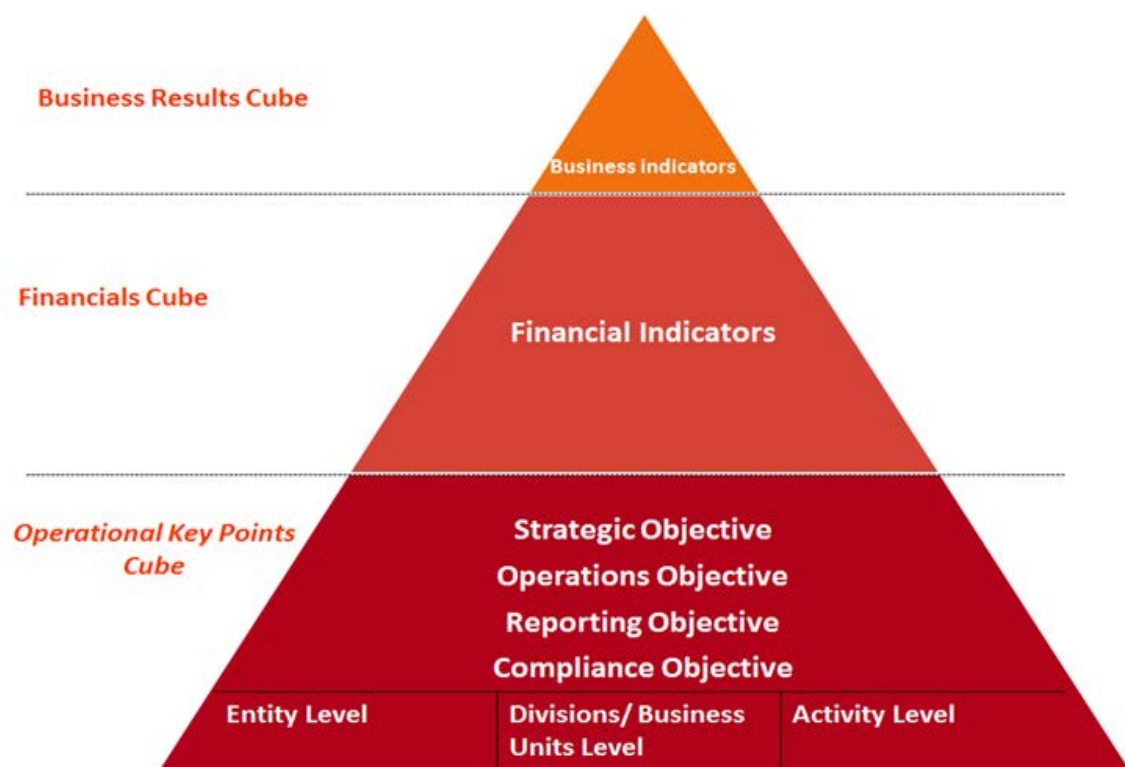
### Welcome to the SHIModel TOOL

SHIModel is a risk assessment tool, based of COSO ERM theory, developed to assess the exposure to risk for companies activating in any field and industry. The exposure to risk is determined by three important perspectives: general business wise, financial indicators and operational risks [1].

The overall assessment of the company, divided in these three assessment processes, will be done in the following steps:

- Three list of yes/ no question will be applied.
- The answers to these questions will create the data base for the mathematical model.

The risk assessment under SHIModel approach refers measuring the organization's risks, determines if all the indicators are in compliance with the overall business strategy and is aware of measures to manage associated risks.



**Figure 1.** SHIModel Framework.

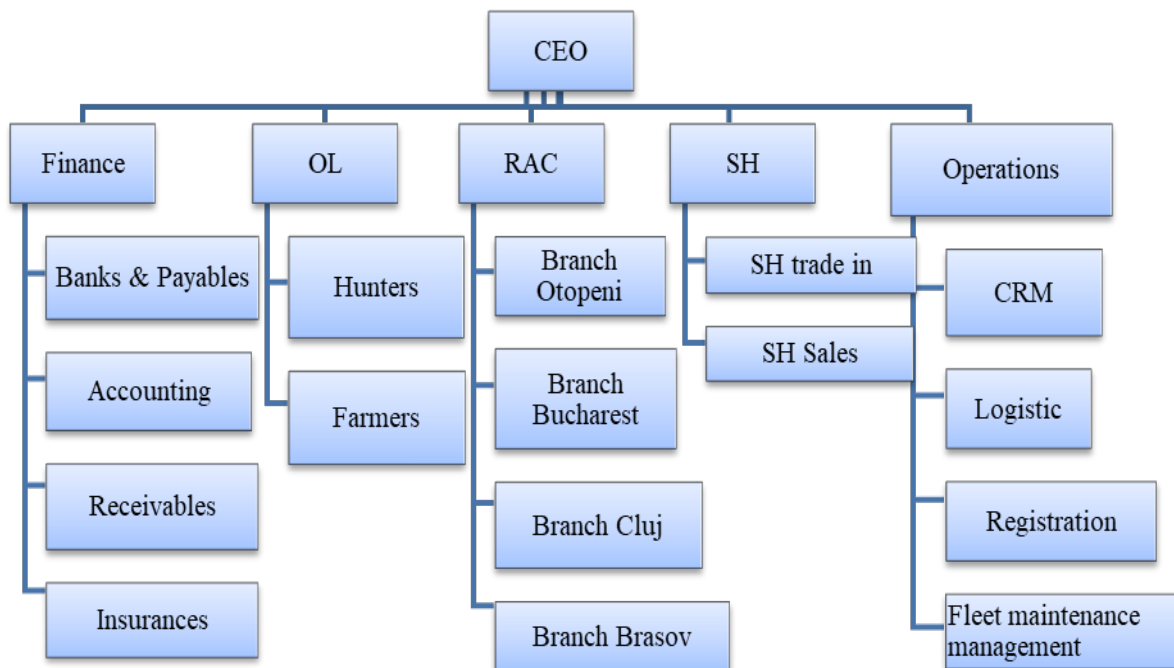
*Source: developed by the author.*

As an example, to understand how the SHIModel works, I present below the procedure and results obtained on one company (Figure 1). The assessment's goal was to develop actions plans which should be adapted to the company's own needs [2].

The company analysed is a leading company that delivers premium services in the local automotive industry. The company is providing services in the following fields: Rent a car (Business Unit A), Operational leasing (Business Unit B) and Automotive second-hand cars retail (Business Unit C). In 2016 the company's equity was 5.5 MIL EURO, the turnover was about 15 MIL EURO, the profit € 620K EURO and the number of employees - 74 persons.

The activity of the company is structured as showed in Figure 2.

The assessment was made, based on the year-end results of the company registered during 2014 - 2016, using business result cub (BRC), financial result cub (FRC) and operational result cub (ORC) [3].



**Figure 2.** The organizational chart of the company.

*Source: developed by the author.*

Business Results Cube revealed the overview of the business activity over the last three years, showing the evolution of each indicator assessed both, at entity level and at the level of each of the three activities of the company [4]:

- The Equity registered a three-year increase;
- The Overall Turnover registered a one-year increase at Entity level and Business Unit A level, three-year increase at Business Unit B level and two-year decrease at Business Unit C;
- EBITDA registered a two-year increase at Entity level and Business Unit B level, three-year decrease at Business Unit A level and three-year increase at Business Unit C;
- The Profit registered a two-year increase at Entity level, three-year decrease at Business Unit A level and three-year increase at Business Unit B level and Business Unit C;
- The Sales registered a two-year increase at Entity level and Business Unit A level, three-year increase at Business Unit B level and two-year decrease at Business Unit C;
- The Market Share registered a two-year increase at Entity level, Business Unit A level and Business Unit C level and three-year increase at Business Unit B.

In conclusion, the business situation is improving at all levels, in the past three years. The increasing in Equity of the company shows its healthy capacity of development, the enlargement of the business in a sustainable way based as well on the commitment of the shareholders. The decrease in Overall Turnover and Sales for Business Unit C, even though the profitability indicators are increasing, shows that the business strategy of the company changed for this business unit, favouring the profitability over turnover. The decreasing EBITDA and Profit indicator at Business Unit A level, even though the sales are increasing,

shows that the business strategy of the company changed for this business unit, favouring the turnover over profitability.

The Financial Result Cub was applied only at Entity level. The analysis was made based on the year-end financial results of the company registered during 2014 - 2016. Financial Results Cube applied, revealed the overview of the financial activity over the past three years, showing the evolution of each indicator assessed at entity level, as following:

- Working Capital Ratio - registered a one-year increase;
- Quick Ratio - registered a one-year increase;
- Receivable Turnover – registered a one-year decrease;
- Inventory Turnover - stagnated;
- Debt-Ratio - registered a three-year increase;
- Debt-to Equity Ratio - registered a three-year increase;
- Gross Profit Margin - registered a three-year increase;
- Net Profit Margin - registered a two-year increase;
- Return on Assets (ROA) - registered a two-year increase;
- Return on Equity (ROE) - registered a one-year decrease;
- Accounts payable turnover - registered a two-year decrease;
- Interest coverage - registered a one-year increase;
- Debt coverage - registered a one-year increase;
- Cash flow from operations - registered a one-year increase.

In conclusion, the financial situation is improving in the above-mentioned period. The increasing Working Capital and Quick Ratio show the good ability of the company to support its operations with liquidities. The increasing debt indicators (Debt-Ratio and Debt-to Equity Ratio) show that the company supported its growth also through loans. In terms of profitability, the company is on a positive trend, which shows its capacity to produce money. Increasing ROA and ROE shows that the company is effectively converting the money it has to invest into net income. The capacity of the company to pay its due debts and the interest generated by these debts (Interest coverage and Debt coverage indicators) is also increasing. Last, but not least, Cash flow from operations, is a very important indicator and shows that the company has the ability to generate enough cash from its operations and to cover its current expenses, debts and taxes.

Overall conclusion of the financial analysis shows that the company is passing through a development process in all its areas of activity.

The Operational risk exposure (OKPC) of company was assessed at 6 organizational levels:

- a) Entity level
- b) Business Unit A (Rent a car) level
- c) Business Unit B (Operational Leasing) level
- d) Business Unit C (Second hand cars retail) level
- e) Finance Division level
- f) Operations Division level

The weight of the questions was established for this company by 5 managers, according to their experience. Each of them is responsible for a certain department in the company's organizational structure and overall management: Financial Manager, Operational Leasing Director, Rent a Car Manager and Second-Hand Car Sales Manager.



Based on the answers provided by the company to the questions required by OKPC assessment, the following conclusions were drawn [2]:

- Out of the total of 768 questions, with a total weight of 19,655 points, 60.32% were answered “Yes”, weighting 11,856 points and 39.68% were answered “No”, weighting 7,799 points;
- Compliance area gained the least number of points, resulting a capacity to manage the risks of 38.34% - signalled in red colour;
- The organizational level that summed up the least number of points, with a capacity to manage risks of 58.44% was the Business Unit/Division level - signalled in yellow colour;
- The areas that gained the least number of points were Event Identification, with a capacity to manage risks of 43.3% and Risk Assessment, with a capacity to manage risks of 22.04% - both signalled in red colour.

The areas that summed up more points, but remained under the 60% threshold, were Internal environment, with a capacity to manage risks of 54.65% and Customer satisfaction, with a capacity to manage risks of 54.39% - both signalled in yellow colour. The company has an overall exposure to risk of 39.68%. Analysed from the perspective of crisis prevention, the company has a capacity to manage risks and prevent crises of 60.32%. The risk exposure is mainly concentrated on the Compliance level, Event identification (risk or opportunities) and Risk assessment. These levels are all below the threshold of 45%, which makes them highly exposed to operational risk, and they are all signalled in red colour. Compliance objective has a high exposure to risk, especially on the Business unit/Division level. Other areas that are exposed to risk are Internal environment and Customer satisfaction. These perspectives are in the medium range in terms of exposure to operational risk and they are signalled in yellow colour.

At the Business unit/Division level, risk assessment procedures poorly exist in the company’s environment, although the practically response to risk is an area very well covered (Figure 3).

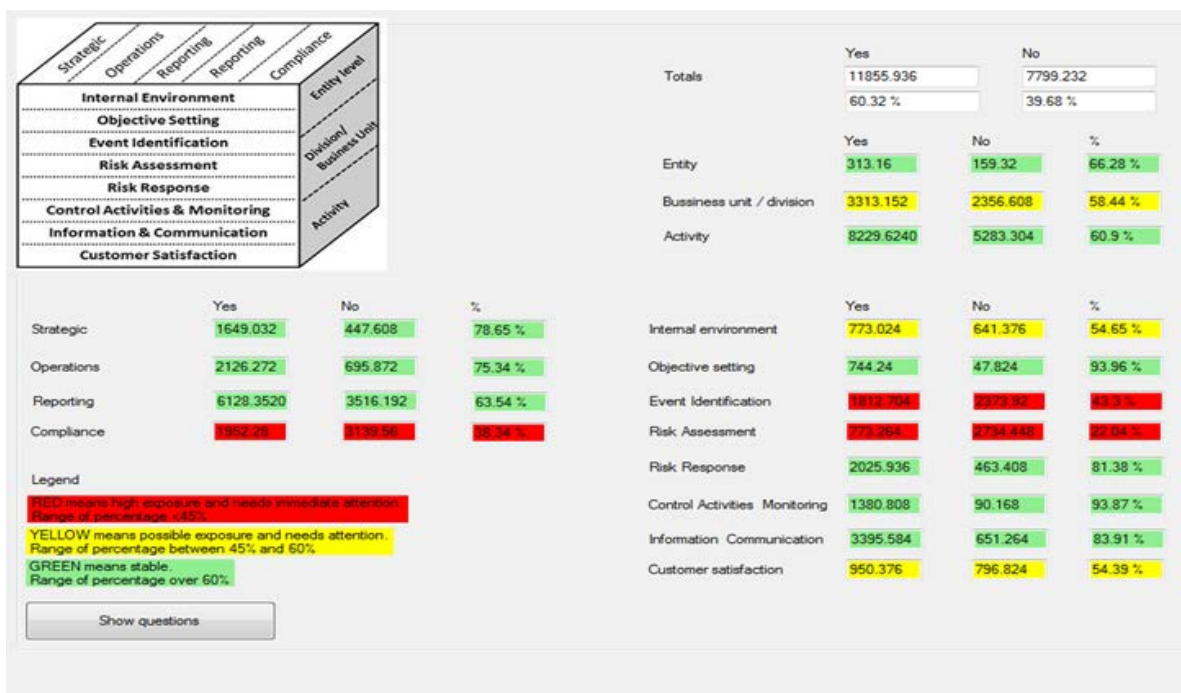


Figure 3. Operational Risk assessment result.

Source: developed by the author.



Based on the results, the action plan was elaborated:

- Create and implement event identification procedures and regulations for event identification (ability to identify opportunities and threats) and risk assessment (ability to evaluate the risks) at business unit/division level;
- Create and implement reporting tools for event identification and risk assessment at business unit/division level;
- Create and implement risk assessment tools and techniques across the organization level of business units and divisions;
- Create and implement monitoring procedures and tools to check if event identification and risk assessment are compliant with the defined procedures and regulations.

Internal environment and Customer satisfaction procedures and tools need to be improved. This means that for these areas, there are some control instruments in place, such as reporting and monitoring tools, but they need to be improved and strengthened in terms of making them mandatory through the internal regulation system and better monitored.

The Customer satisfaction level and Internal environment procedures define the values and policies followed in every action by the employees of the company. According to the algorithm’s results, these levels must be improved in order to create a uniform image of the company in front of the customers, on the market and internally.

Second assessment - After eleven weeks, a second assessment was conducted, to determine how the situation of the company improved as a result of applying the action plan established by the algorithm (Figure 4).

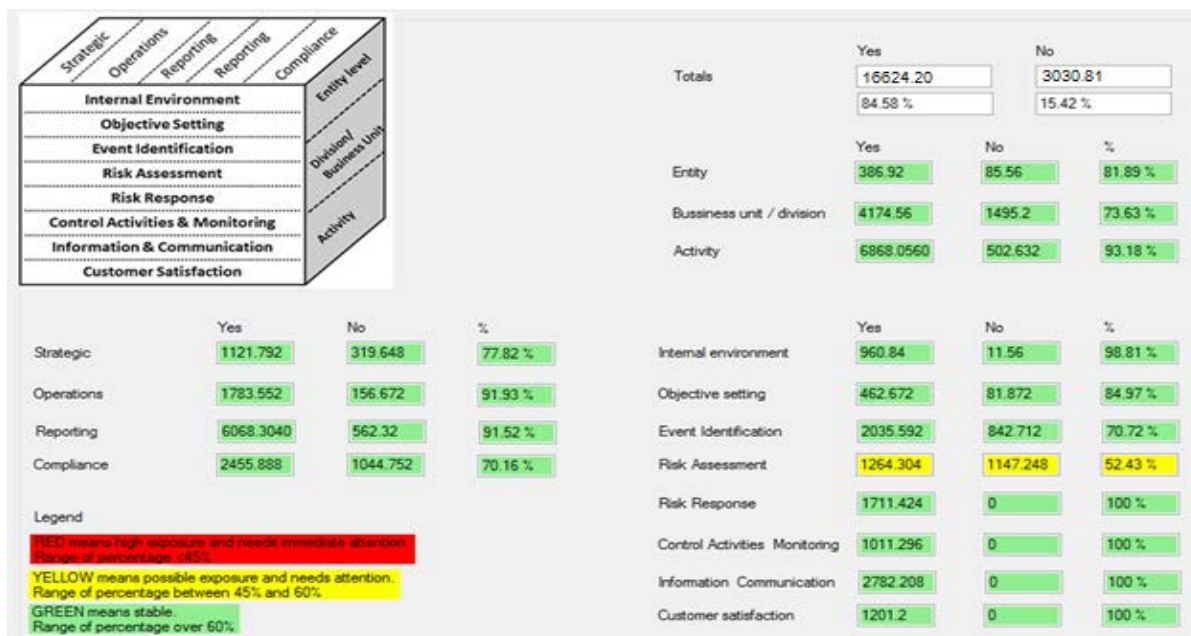


Figure 4. Second Operational Risk assessment result.

Source: developed by the author.

- The overall risk exposure reduced from 39.68% to 15.42%;
- Compliance and Event identification areas went from red alert range of high exposure to green, stable range;

- Risk assessment area went from red alert range of high exposure to yellow, moderate risk range;
- Internal environment and Customer satisfaction areas went from yellow alert range of medium exposure to green, stable range;
- Business unit/Division level went from yellow alert range of medium exposure to green, stable range.

Due to the measures taken as a result of applying the algorithm in assessing the exposure to operational risk of the company, overall situation improved in terms of crisis prevention with more than 24%.

### **Post assessment analytic report 2016 – 2018**

At the second analysis, using the same SHIModel, the weak points of the organization were improved and the company was placed in a better position financial, business and management wise. The evolution of financial and business indicators was as follows, compared to the first analysis:

- The Turnover increased by 17% in 2017 compared to 2016 and 24% in 2018 compared 2017
- The Profit of the company increased significantly especially in 2018 compared to 2017.
- The increase of total debts is a normal trend considering the positive evolution of Turnover. However, the most important aspect to be mentioned is the fact that the debts – the costs did not increase with the same unit scale as the increase of Turnover, which means that the company learned how to increase their activity in an efficient way.
- The decreasing trend in overdue payments indicator shows that the company manages better its cash flow and manages to pay on time all debts.

As an overview of how the company evolved during the process, at the first analysis using the Operational Key Point Status Cube, the company presented exposure at Compliance (objective level), Customer Satisfaction, Internal values, Event Identification and Risk Assessment (components level). After implementing measures proposed, at second analysis, the company improved and mitigate all the exposures to risk.

The purpose of the post assessment for 2016 – 2018 was to verify the sustainability of the company after mitigating the exposures. According to the findings, it can be concluded that there is a significant link between reducing the exposure to risk of Compliance, Customer Satisfaction and Internal values - and the progress of company's business activity, financial and operational figures.

In retrospective, two years after the process, the company is stronger, functioning in a healthier environment, more profitable, with a better image in front of the customers - trust and quality wise - and more valuable from assets points of view.

### **Conclusions**

Managers must pay more attention to operational aspects of company's activity [5]. Even though the business and financial situation of a company gives to the auditors the measure of the general health and stability of the business, this diagnostic is not enough for the overall analysis of a company [6]. A high operational risk can coexist with a healthy financial situation, or vice versa, a poor financial situation can exist even though the

operational risk is low. This is possible because financial management and operational management are two different internal processes, inter-connected, but independent.

SHIModel measures the operational risk and based on the algorithm assessment, designs a specific action plan, that will contain exact instructions aiming to diminish the exposure to specific risks of the organization.

The process of identifying, assessing and mitigating potential threats must be part of the larger crisis management process, called crisis prevention [7, 8]. Implemented within an organization as a continuous process, crisis prevention or risk management will diminish considerably the probability for the organization to face a crisis [9]. The exposure to crises will not decrease to zero, as there is always a certain percentage of risks that can never be completely eliminated, but the chances of avoiding a crisis and recovering after a crisis will be much higher when the organization is adopting a crisis prevention/risk management approach [10].

SHIModel is the link that builds the bridge and connects the two pillars of a “healthy” company: financial pillar and the operational one.

### **Bibliography**

1. Hezi Shayb. Risk management – identifying, assessing and responding to risk/Managementul riscului – identificare, evaluare și reacție la risc. Revista Economica Nr. 1 (107), 2019, [http://www.ase.md/files/publicatii/economica/2019/ec\\_2019\\_1.pdf](http://www.ase.md/files/publicatii/economica/2019/ec_2019_1.pdf).
2. Hezi Shayb, Larisa Bugaian. Algorithm for assessing companies' risk exposure, Journal of Social Science, 2018, Vol. I(2), Publish house "Tehnica UTM", ISSN 2587-3490, eISSN 2587-3504, p.73-80, <http://repository.utm.md/xmlui/handle/5014/717>.
3. Hezi Aviram Shayb. Crisis management versus risk management – a practical approach. Athenaeum University Edition „Internal auditing&Risk management”, nr.2 (46), June 2016. pg. 28-35. <http://aimr.univath.ro/en/article/Crisis-management-versus-risk-management--a-practical-approach~1112.html>.
4. Hezi Aviram Shayb. Restructuring companies under crisis. SEA Practical Application of Science, Vol. IV, issues 3 (12) nr.2 (46), 2016. pg. 581-585, <http://spas.seaopenresearch.eu/volume-iv>.
5. Shelton, C.K. and J.R. Darling (2001) „Entrepreneurship in the Quantum Age: A New Set of Organizational Development Skills”, The Academy of Entrepreneurship Journal, Winter, pages 45–46.
6. Hezi Shayb. Business Strategy during Crisis. 14th International Conference on Business Excellence „Business Revolution in the Digital Era IS”, Academy of Economic Studies, Bucuresti, Proceedings of the International Conference on Business Excellence, București, România, 2020, June 11-12, 2020, DOI: <https://doi.org/10.2478/picbe-2020-0025>, <https://content.sciendo.com/view/journals/picbe/14/1/article-p263.xml#d43079704e80>.
7. Knight, F. H. (1964) „Risk, Uncertainty and Profit”, Augustus M. Kelley, New York, pp. 20.
8. Radu-Cristian Muștescu, Hezi-Aviram Shaybe. Exploring the Concept of Crisis in Businesses: a Critical Step in the Formulation and Implementation of Crisis Management. Academy of Economic Studies, București, Proceedings of the 13th International Conference on Business Excellence, București, România, March 21-22, 2019, DOI: 10.2478/picbe-2019-0084, pp.962-968, ISSN 2558-9652
9. Gunning J. G. and J. I. C. Hanna. „The Application of Risk Management Principles to Crisis Management Construction”, Akintoye, A (Ed.) (2001) 17th Annual ARCOM Conference, 5-7 September, University of Salford. Association of Researchers in Construction Management, vol. 1, page 815.
10. Her Majesty's Treasury, Risk management assessment framework: a tool for departments, 2009, UK Government, Office of Public Sector Information.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).09](https://doi.org/10.52326/jss.utm.2021.4(2).09)  
UDC 339.5:004.738.5



## DESIGNING A HOLISTIC ADAPTIVE RECOMMENDER SYSTEM (HARS) FOR CUSTOMER RELATIONSHIP DEVELOPMENT: A CONCEPTUAL FRAMEWORK

Alina Popa\*, ORCID ID: 0000-0001-8727-1687

*Bucharest Academy of Economic Studies, 6 Piața Romană, Bucharest, Romania*

*\*popa.alina.alexei@gmail.com*

Received: 04. 11. 2021

Accepted: 05. 15. 2021

**Abstract.** With the recent COVID-19 pandemic, the world we knew changed significantly. The buying behavior shifted as well and is reflected by a growing transition to online interaction, higher media consumption and massive turn to online shopping. Companies that aim to remain top of mind to customers should ensure that their way of interacting with user is both relevant and highly adaptive. Companies should invest in state-of-the-art technologies that help manage and optimize the relationship with the client based on both online and offline data. One of the most popular applications that companies use to develop the client relationship is a Recommender System. The vast majority of traditional recommender systems consider the recommendation as a static procedure and focus either on a specific type of recommendation or on some limited data. In this paper, it is proposed a novel Reinforcement Learning-based recommender system that has an integrative view over data and recommendation landscape, as well as it is highly adaptive to changes in customer behavior, the Holistic Adaptive Recommender System (HARS). From system design to detailed activities, it was attempted to present a comprehensive way of designing and developing a HARS system for an e-commerce company use-case as well as giving a suite of metrics that could be used for its evaluation.

**Keywords:** *Recommender Systems, Customer Engagement, Reinforcement Learning, Framework, Integrated Customer View.*

**Rezumat.** Odată cu recenta pandemie COVID-19, lumea pe care o cunoșteam s-a schimbat semnificativ. Comportamentul cumpărătorului s-a schimbat și se reflectă printr-o tranziție în creștere către interacțiunea online, un consum mai mare de mass-media și o transformare masivă în cumpărături online. Companiile care își propun să rămână la îndemâna clienților ar trebui să se asigure că modul lor de interacțiune cu utilizatorul este atât relevant, cât și adaptabil. Companiile ar trebui să investească în tehnologii de ultimă generație care să ajute la gestionarea și optimizarea relației cu clientul atât pe baza datelor online, cât și offline. Una dintre cele mai populare aplicații pe care companiile le utilizează pentru a dezvolta relația cu clientul este un sistem de recomandare. Marea majoritate a sistemelor tradiționale de recomandare consideră recomandarea ca o procedură statică și se concentrează fie pe un anumit tip de recomandare, fie pe unele date limitate. În articol se

propune un nou sistem de recomandare bazat pe învățarea de consolidare, care are o viziune integrativă asupra datelor și peisajului de recomandare, precum și foarte adaptabil la schimbările de comportament ale clienților, Holistic Adaptive Recommender System (HARS). S-a încercat prezentarea modului de proiectare și dezvoltare a unui sistem HARS pentru un caz de utilizare al unei companii de comerț electronic, precum și oferirea unei suite de valori care ar putea fi utilizate pentru evaluarea acestuia.

**Cuvinte cheie:** *sisteme de recomandare, implicarea clienților, învățare consolidată, cadru, vizualizare integrată a clienților.*

### **Introduction**

The year 2020 was a year of disruption, business challenges and change in consumer behavior patterns. A series of expert reports from big consulting companies show the main shifts in the buying patterns and consumer habits. In an early pandemic report from Accenture [1], it was brought into focus the e-commerce phenomenon on which the demand for online shopping has surged at unprecedented rates for all the categories of goods. The growth is coming mainly from the “new to online” segments of consumers. Another research [2] shows that this pattern is going to stick as consumers report an intent to shop online even after the crisis. Same publication highlights another trend called “shock to loyalty”. This means that consumers are switching brands at increasing rates and try new shopping behaviors leading to the need of brands to convey value. The already existing overload of information on the Internet, new customer segments and the decrease in loyalty towards brands require companies to respond appropriately to these challenges in order to stay “top of mind” with prospects and clients and adapt quickly to their new needs and expectations.

Especially in the virtual environment, Data Mining applications can help solve issues and even take advantage of the current situation by efficiently managing the relationship with the customers [3].

In online retailing, a family of applications called Recommender Systems (RecSys) can help businesses stay relevant to their customers by leveraging the existing data about users and/or different items in order to help users find the right item for them [4]. Today, RecSys are used extensively by big companies as Netflix [5, 6], Google [7, 8], Amazon [9]. One disadvantage of the current approaches of RecSys like Collaborative filtering or Content-based recommendations is that these strategies consider only the two elements, users and items when delivering recommendations, making impossible to both detect important patterns that include other elements and to adapt it to the context or changing environment. Also, each of the recommendation approaches has its own limitations. Items recommended through Content-based filtering are always similar to the items previously bought or consumed by the user [10], while Collaborative filtering provides a good solution only under static scenarios when there are many users that bought or consumed the same product [11]. Hybrid recommender systems combine two or more recommendation strategies in different ways to benefit from their complementary advantages [12] and overcome the limitations of individual components. Another limitation of RecSys, regardless of strategy, that make them encounter challenges in rapidly changing environments is the assumption that user’s underlying preferences remains unchanged, thus the recommendation procedure is a static process [13, 14].

One of the best-known approaches that allows to include adaptability in a system is Reinforcement Learning (RL) [15 - 17], being used successfully in robotics for changing environments [18], sustainable energy, heating and electric systems [19], intelligent educational system [20] and smart manufacturing systems [21].

There is a series of publications that explore the usage of RL in the area of RecSys. Out of which there are those that focus on user-item interaction sequence or user's browsing history and use it to create a state that later is fed to the RL model [22 - 27]. A different approach is to use user and item sets which are obtained from bi-clustering as environmental states [14]. An earlier paper is using both user information and item information vectors and refers to it as context [28]. Important work on integrating negative influence of irrelevant recommendations is done by using negative rewards [24, 25, 27, 29].

To the knowledge of the author, none of the works present in the field combine in one approach the following elements of an efficient recommendation: 1) user information and past behavior, 2) item's characteristics 3) recommendation context, 4) consumption context, 5) adaptivity and 6) the idea of negative rewards.

Thus, in this paper, it is presented the design of a Holistic Adaptive Recommender System with focus on customer relationship development. The conceptual framework is combining three recommendation strategies leveraging extensive information about user, items and context using RL to automatically learn the optimal combination of these via trial-and-error. This will allow the system to quickly adapt to the changing needs of the customers and focus to build a fruitful relationship with the client.

### **Literature Review**

In this section, we first describe the basic problem of RecSys and their types. We then go more in depth into each of the recommender strategies specifics, latest advances and limitation. Next, we introduce RL practice and analyze it's to date usage and limitations in the recommendation area. Also, we will explore the different fairness formalization for ML systems and recommendation in particular and give an overview on how these definitions were translated into implementation.

### ***Recommender Systems (RecSys)***

In the human decision-making process, obtaining recommendations from trusted sources is a critical component. Usually, this role is played by family, friends or subject-matter experts. Online space is offering a multitude of options and information that has the drawback of being too overwhelming to the user.

The goal of a recommender system is to create and give relevant recommendations of items or products to users. This will both increase customer satisfaction and will create a qualitative interaction with company's items or products. The design of a recommendation engine it is highly dependent on the data available and final goal of the system. RecSys can help customers find the items they want to purchase as well as improve cross-sells by suggesting additional products for the customer to acquire [11].

RecSys show differences in the way they analyze data sources and the way they conceptualize a good recommendation to be [4]. Depending on the structure of the learning system, we traditionally distinguish [4]:

- Collaborative Filtering: In this type of systems, a user is recommended items based on the previous ratings of the users that bought/ used the product.

- Content-based Filtering: These systems recommend items that are similar to items the user has liked in the past.
- Hybrid approaches: These methods try to combine both collaborative and content-based approaches into one in order to overcome the individual limitations of each of the approaches.

A different Machine Learning approach that tries to recommend an item or product to client is based on association methods. Although these methods are not referred to as recommendation strategies, the aim of the system is very similar. We refer to these methods as recommendation of complementary products later in the text.

Additionally, the system may have access to user-specific, context specific and item specific attributes such as demographics, browsing history and product description and reviews that allow to extend functionality of the traditional structure presented above.

Currently, the architecture of RecSys and their evaluation on real-world problems is an active area of research.

### ***Collaborative Filtering***

Collaborative filtering (CF) systems collect user feedback in the form of ratings or ranks and makes recommendations to the active user based on items that other users with similar preferences liked in the past [30].

A method extensively used in modelling user behavior and preferences in the area of CF is Singular Value Decomposition (SVD). SVD gained extreme popularity after Netflix (a film and television company) hosted a competition in 2007 to develop a recommendation system based on the user's viewing history and preferences.

The aim of any recommendation system is to suggest elements that are relevant to users [31]. These can be TV shows or movies, as in the case of Netflix or food, clothing and books. The principle remains the same for any field, namely, creating a pleasant user experience that brings additional revenue to the company.

Because solutions that included the use of SVD or other matrix factorization and decomposition methods [32] achieved the highest performance at Netflix Prize, the method is mainly used in such applications.

The basic idea of SVD is to extract the latent dimensions of users and products starting from the matrix represented by the user notes given to the products used in the past.

Latent variables of users are usually considered their preferences in terms of product characteristics, e.g. product type, brand or functionality. At the same time, the latent variables of the products are the characteristics mentioned earlier.

The question SVD is trying to answer is "If consumer X were to use product Y, how would he rank it?" [33]. Before making this type of prediction, we need to model the ranks given by users as a function between characteristics and preferences, in other words between the latent variables of users and those of items. With the help of SVD, the "user-product" matrix can be decomposed into a matrix product [34], each of which represents a certain type of hidden variables.

Latest advances in the field include using graph encoding, Stochastic Shared Embeddings, large-scale Pairwise Collaborative Ranking, Sequential Recommendation Via Personalized Transformer [35] that mainly solve the problem of scaling to massive datasets, learn user and item embeddings and think about the problem as a sequence of actions, not

one-shot recommendations. The user and items embeddings are mainly a different way to refer to latent variables and a series of work leverage the power of Neural Networks to try and learn them [36 - 38].

### **Content-Based Filtering**

The intuition behind a content-based recommendation is to suggest to a customer a product similar to those the user has previously purchased.

This type of recommendation is useful in the case of a new user. If user has bought at least one product, we can make recommendations for products similar to the one bought. And if the company has a new product, the features can be extracted regardless of whether it was purchased or not, respectively it can be recommended to a user if it is similar to another product already purchased.

Since this method tries to extract similar objects, it is necessary to use a measure that can determine whether two objects are similar or different.

There are two main types of measures used to estimate this relationship: measures of distance and measures of similarity between objects [39].

To efficiently use both measures, an item characteristic should be transformed in a vectorial form containing only numerical values.

The intuition behind the use of distance as a measure of similarity is expressed by the idea that objects of the same kind are close to each other in the vector space, and different ones are at a greater distance.

There are a series of distances that can be used for this objective, like Euclidian, Manhattan, Minkowski [39]. Regarding Similarity metrics, these can be Jaccard, Pearson or Cosine [40].

Most of the advances in the content-based recommendation area is based on finding best ways to represent an item through a vector, or, in other words, get their embeddings [41 - 46].

### **Complementary Product Recommendation**

When recommending complementary products, systems try to leverage the transaction history of customers [47]. Also, products often bought together explains a lot the consumption context.

Association algorithms are a group of unsupervised methods that are very popular in Data Mining projects.

These result in a set of association rules, which represent the hidden structures in the initial data.

The term Association Rule was first introduced by [48] in the context of shopping cart analysis. The methods try to measure the importance of the co-appearance of some elements or values from the data set.

Association Methods and APRIORI in particular are used in Recommendation Systems for educational courses and e-learning [49, 50], social media [51], library and books [52, 53] and e-commerce [54].

Still, they are not very popular in this area, although the methods are powerful in extracting knowledge and consumption context of the products or services.

The APRIORI algorithm remained essentially unchanged since its introduction to the research community, although there are sporadic efforts to extend it, for example adapting



it for time series of frequent items [55] or to make it more efficient by solving the problem of frequently scanned dataset and generation of large number of candidates [56].

### **Reinforcement Learning (RL)**

RL is an area of machine learning that has been inspired by behavioral psychology. The field focuses on how a software agent (hereinafter agent) should take action and how to interact with an environment so as to maximize a total reward function.

As mentioned, an agent can interact with the environment and learn through trial and error, just like humans and animals. Every action that the agent performs in an environment influences the future state of the agent. Also, each action is rewarded with a reward, and this is the only response the learner receives [57]. The mechanism that generates the reward and the transition from one state of the agent to another refers to the dynamics of the environment [39].

The agent's goal is to maximize his total long-term reward in the way he responds to his environment. This can happen if an agent explores the environment and tries to learn its dynamics. At first, an agent will not be able to correctly predict the outcome of his actions, but as he interacts with the environment and observes the consequences of his actions, he can adapt his behavior. Thus, learning in RL refers to the development of a tactic or policy that would help the agent to make the best decision in a situation.

Formally, the environment is a mathematical model known as the Markov Decision Process (MDP) encountered primarily in dynamic programming. The difference between the classical methods of dynamic control and RL is that the latter does not know the MDP model and can be used if these processes are very complex and other methods are unfeasible [58]. The basic MDP model contains the following components:

- A set of environmental states  $S_1, \dots, S_n \in S$ : These can refer to the inherent characteristics of the agent or objects that surround and interact with it. The sum of the states of the environment is equal to the product of the number of values that each characteristic of the environment can take. The set of all possible states is known as the state space. The state space for an environment in which all characteristics are categorical is a finite or discrete space. If there are continuous features, this space is infinite.
- A set of actions that the agent can take,  $A_1, \dots, A_m \in A$ : These refer to all possible actions that the agent controls. Both the set of actions and the set of states - can be finite or infinite.
- Transition function from one state to another: Being a Markov process, the next state of the system depends only on its previous state and the action taken, not on the whole history of the situations and actions taken.
- The reward function represents the value of the reward obtained after acting with  $A_t$  in  $S_t$ .

An agent is a computer program that is able to observe and interact with the environment defined by the MDP. The agent perceives the environment as a set of observations that define a state.

1. The agent interacts with the environment in a feedback loop pattern by following the steps below:
2. The agent observes the characteristics of the environment that define the current state,  $S_t$ .
3. The agent chooses an action from the set of possible actions,  $A_t$ , with which it responds to the environment in the current state  $S_t$ .

4. The agent enters a waiting state until the characteristics of the environment change with the  $S_{t+1}$  state and the agent receives the  $R_{t+1}$  reward.
5. Repeat steps 1 - 3.

The agent's behavior or the way he interacts with the environment is described by a function called action policy or simple policy [59]. It specifies the actions to be taken when the agent is in a certain state. The agent's learning goal is to find a policy that maximizes the total reward.

### ***Recommender Systems using Reinforcement Learning***

The intuition in which RecSys aim to provide recommendations to users with the objective of maximizing the long-term user satisfaction with the company requires a RL component that would keep track and optimize the system for this fruitful engagement and relationship with the client.

As previously mentioned, in the literature there are already RecSys that include an RL engine. It is useful to formalize the problem of RL in the RecSys area and see the differences in the approach of the different research.

As mentioned above, formally, the RL problem can be defined as a mathematical MDP model. For that we need to specify the States, Actions and Rewards.

States are defined differently in the existing research literature. For example, they can reflect a mapping of previous user-item interactions into a hidden state [27], user's recommendation and ad browsing history [25], previous items that a user clicked [24], the sequence of visited and recommended items [22] or a more detailed interaction sequence that contains clicking, purchasing, or skipping, leaving [26]. An interesting approach is to define states as the cluster resulted from the co-clustering or bi-clustering of users and items [14] or to extend the state to include user demographics [13]. Efforts are as well invested in how to best represent the state in a RL RecSys [60]. Currently, and as to the knowledge of the author, in the current literature there is no approach where the recommendation context, user demographics, behavioral patterns and recent browsing/interaction history is taken into account in the state definition.

Actions are mostly defined as selecting an item to be recommended from the whole discrete action space which contains candidate items [24, 26, 27] or even whether to give a recommendation or not, and if yes, what would be the item to recommend [25]. There are authors that consider recommending a list of items [13, 23, 60]. One of the most different approaches is to recommend items from neighboring clusters to the user-items one [14]. As mentioned in multiple articles [61, 62], RL in RecSys has a common issue of efficiency that comes from the fact that the action space is too large, consisting of all candidate items, and thus huge amount of interaction data is required for learning an optimal policy. This can be overcome by having a smaller action space through a step of pre-selected item types or recommendation strategies.

The reward function is heavily dependent on user feedback and actions he takes, for example user can click or purchase a recommended item and receive a positive reward or to skip it and get a different reward value [22 - 25, 27]. Reward can consist of immediate user feedback, but as well as a longer-term objective [26].

Most of the rewards are not deterministic and depend very much on how the user is reacting, but there are also formulations when this is seen deterministically as the Jaccard distance between the user vectors of the time  $t$  and  $t+1$  state [14]. It is important to note

the research direction as well towards using negative rewards. This can help the learning agent into searching for a policy that would be appropriate for overcoming the information fatigue [24, 25, 27, 29].

### **Methodology**

In this section, we propose a Holistic Adaptive Recommender System conceptual framework for customer relationship development that aims to close the gaps in the currently existing literature. To be more specific, we first set the objectives for our recommendation system and then propose a novel adaptive architecture, which is combining three recommendation strategies by using an RL engine. Then, we discuss step by step all the activities involved in such a system.

#### ***Holistic Adaptive Recommender System Objectives***

In the present paper, the objective is to create a conceptual design of a recommender system that holds the following requirements. It is:

1. Using user information
2. Leveraging past customer behavior patterns
3. Including the recommendation context
4. Extracting value from using consumption context and patterns
5. Incorporating an adaptivity functionality
6. Optimizing for long term customer engagement using negative rewards where appropriate
7. Covering information about item's characteristics or recommended content

For exemplification purposes, we will use the case of an e-commerce company that is selling products and adapt the following concepts to it.

#### ***System overview***

Once converted, the relationship with a new customer must be developed for it to become profitable. In simple terms, this means understanding and covering the client's needs.

The objective of the system is to extract consumer preferences and use this knowledge to find the most appropriate products and / or content that will be recommended through communication and interaction with the customer.

The proposed recommendation system design is shown schematically in Figure 1.

#### ***System components***

##### ***Data Ingestion***

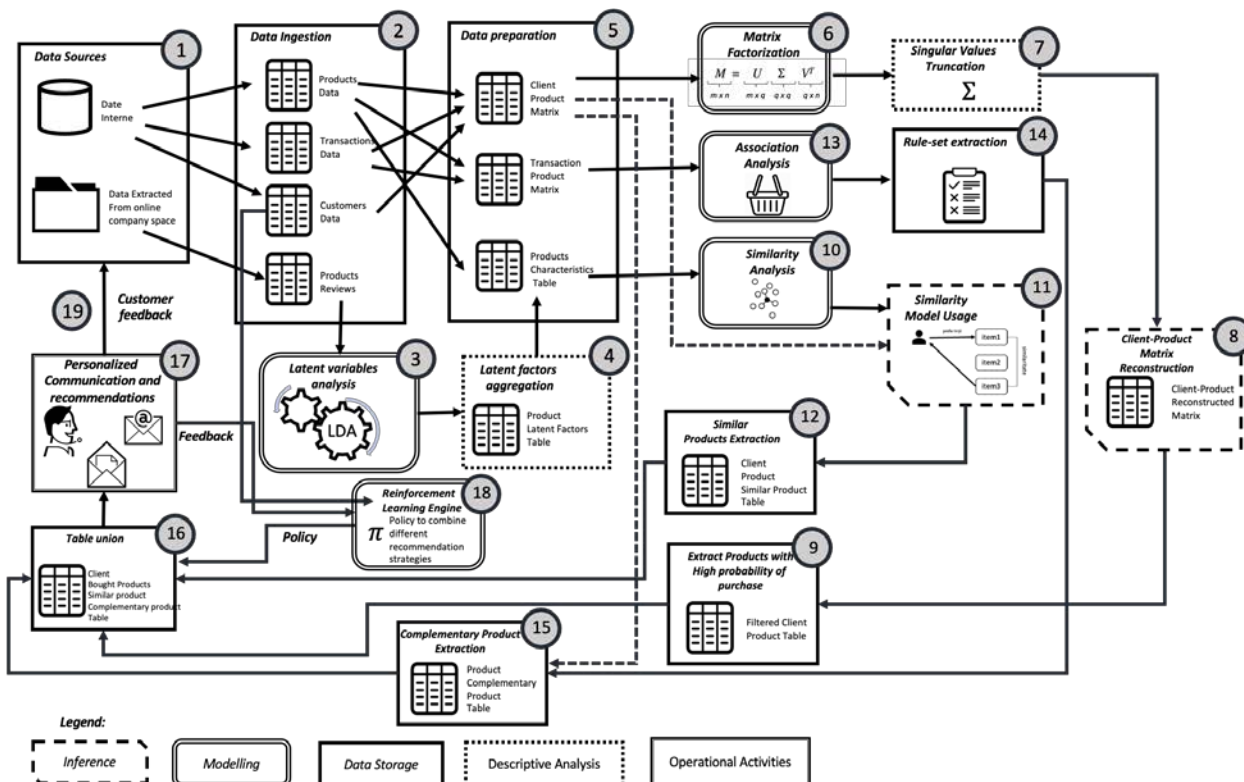
The application starts by setting data sources (Figure 1, 1). The information considered mandatory is customer data, their past purchases, product data and external data on online reviews of the company's products.

##### ***Data preparation***

The next step is to prepare the tables in the form in which they will be used in different components (Figure 1, 5):

- *The Customer-Product matrix:* The customer-product matrix contains information about the products purchased by a customer during the analysis period.
- *The Transaction-Product matrix:* Typically, data on customer purchases is stored in transactional format. Thus, a transaction contains several rows.

- *The product characteristics table:* In order to create the product feature table, we use the initial *Product Data Table* which contains all the tangible and intangible characteristics of an item. In addition to this information, we extract the main topics from reviews related to a certain product (Figure 1, 3).



**Figure 1.** Design of a Holistic Adaptive Recommender System.

*Recommendation Components*

Once all the main tables are prepared (Figure 1, 5), three recommendation components are developed, and their results are merged in a later step based on a RL policy (Figure 1, 16).

*User-oriented collaborative filtering recommendation* (Figure 1, 6 - 9): The method starts from the assumption that similar users have similar preferences [63] and reflects the real situation when recommendations from friends are more effective (since friends share preferences).

Step (Figure 1, 6) shows a model that tries to explain the customer-product shopping matrix using a set of latent factors. Latent structures are automatically deduced from the matrix, as long as the number of factors is specified/fixed [63]. Once the factors are discovered, the model associates the belonging of an item to a factor and the user's inclination towards the same factor. For each customer, the model will recommend products that have values close to “1” in the reconstructed matrix and have not been purchased in the past.

*Content-based recommendation* (Figure 1, 10-12): In the case of new customers or products, instead of the matrix of products purchased by a customer, the *Product Characteristics Table* is used. For example, one can use all available information about the tangible and intangible properties of the product.

*Complementary product recommendation* (Figure 1, 13-15): In Association Analysis step, we extract rule sets from transactions. This is extremely useful as it emphasizes the context of using/consuming the initial item. This as well brings completeness to customer's need by saying "if you want to use this, do not forget about that".

#### *Reinforcement Learning Engine*

The next task of the marketer is to choose the recommendation strategy for a type of customer. In other words, the question that needs to be answered is: "For this type of client, what is the most appropriate action to take? Recommendation of a product that corresponds to the latent structures of the client? A product similar to what he/she bought before or a complementary product?".

One solution that could combine customer information, purchasing behaviour in order to choose the best action is to use a RL component (Figure 1, 18).

Here, we need to define the RL problem as an MDP system:

- *The set of environmental states* is represented by the finite clusters over the vector space defined by the characteristics of the environment:
  - The socio-demographic characteristics of the customer
  - Its buying behavior segment created on data about diversification, focus on a product, appetite for novelty, past bought categories.
  - The characteristics of the period in which the browsing and recommendation is made. This can include time of the day or year, browsing device, browsing session time etc.
- *The set of actions* represents all possible actions that the recommendation system controls. As there are three recommendation strategies, the set of actions is represented by the individual recommendations or combinations of them (Figure 1, 16), for example recommending a product that has a high probability of being purchased or recommending together a similar product and a complementary product. The advantage of formulizing the actions like this is the low complexity given by action space: instead of having all the candidate items, we have to just make the decision on how to combine the items given by traditional recommendation strategies.
- *The reward function* is conditioned by the client's response to the recommendation received (Figure 1, 19). A series of responses from client can be distinguished like "The customer clicks on the recommended product and buys it" or "The client opens the communication message, but does not click", each with an associated reward. The associated reward is set in such a way that reaches a negative value if user ends the communication with company.
- *The policy* is extracted using Temporal Difference Methods [64] as they are appropriate for continuous tasks having discrete space and action spaces.

#### *System Evaluation Metrics*

The efficiency of the recommender system can be determined using metrics specific to marketing campaigns:

- Click Through Rate (CTR) reflects the ratio of the number of people who clicked on a recommended product:

$$CTR = \frac{\text{Number of clicks}}{\text{Number of recommendations}} \quad (1)$$

- The success rate is the ratio between the number of products purchased from those recommended:

$$\text{Success rate} = \frac{\text{Number of products purchased from recommended}}{\text{Number of total recommended products}} \quad (2)$$

- Return on Investment is a performance measure used to evaluate the efficiency of the overall investment in the developed system:

$$ROI_{\text{application}} = \frac{\text{Revenues from Recommended Products Bought} - \text{System Development Cost}}{\text{System Development Cost}} \quad (3)$$

It is taken into consideration only the revenues from recommended products and think of the system development cost expenses containing both the acquisition of technology, IT consulting services, but also the operational expenses for maintaining the application system.

### **Results and discussions**

In the current paper, it was presented the design of a Holistic Adaptive Recommender System (HARS) for Customer Development, which allows to create a fruitful relationship with the client by optimizing for long-term goals.

First, the gaps in the current conceptual practice were extracted, then, it was designed a system that has a holistic view both towards user, but also with respect to recommendation strategies landscape. The way these strategies are combined, namely through an RL engine, brings both adaptivity and ensure reaching long term objectives into the system. A detail that emphasizes the customer relationship health and importance is the practice of using negative rewards into RL component. Two ways to ensure optimal policy convergence is to take control over action and state spaces. This was stated as a clear problem in the reviewed literature and by using an elegant approach of defining actions as recommendation strategies alone or combination of those, the action space was downsized from the number of all products in portfolio to a maximum of seven actions. The state definition aimed to use all available customer data, as well as recommendation context expressed through browsing time metadata. The way we decided to go to ensure optimal policy convergence, is to discretize the states vector space through clustering. As per author knowledge, both the holistic data inclusion, and actions defined as recommendation strategies are novel additions to the RecSys-RL approach.

In this paper, it was presented a conceptual framework that can be adapted to a large range of use cases, from e-commerce companies to news and media items recommendation. It tries to overcome limitations of both individual traditional recommendation systems as well as RL usage in the area by having an integrated view over customer and focus on the long-term engagement.

It is interesting to see this approach being implemented and used in real-world situations and evaluate how it compares with existing approaches.

### **Conclusion**

Below, there is a summary of the major contributions:

- Identification of challenges in developing the customer relationship in the online space and proposal of a principled approach for better customer engagement.

- Proposal of a reinforcement learning based framework, HARS, for better recommendations that focus on both revenues and relationship with the customer.
- The framework has a holistic view over customer and recommendation landscape ensuring a highly personalized, relevant and positive user interaction.
- Novel RL problem definition that overcomes the common RL in RecSys issue of non-efficiency by using a limited, but relevant action space and discretized and clustered state space.

Same time, the framework should be tested in real-world situations or simulated data and appropriate design changes should be made. This is a conceptual starting point for developing a HARS type application.

## References

1. Accenture (2020), "How COVID-19 will permanently change consumer behavior", accessed on 1 December 2020 at: [https://www.accenture.com/\\_acnmedia/PDF-134/Accenture-COVID19-Consumer-Behaviour-Survey-Research-PoV.pdf#zoom=40](https://www.accenture.com/_acnmedia/PDF-134/Accenture-COVID19-Consumer-Behaviour-Survey-Research-PoV.pdf#zoom=40)
2. McKinsey (2020), accessed on 1st December at: <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Marketing%20and%20Sales/Our%20Insights/The%20great%20consumer%20shift/ten-charts-show-how-us-shopping-behavior-is-changing.pdf?shouldIndex=false>
3. Chorianopoulos, A. (2016). Effective CRM using predictive analytics. John Wiley & Sons.
4. Sammut C., & Webb G. I. (2017). Encyclopedia of machine learning and data mining. Springer.
5. Gomez-Uribe, C. A., & Hunt, N. (2015). The Netflix recommender system: Algorithms, business value, and innovation. *ACM Transactions on Management Information Systems (TMIS)*, 6(4), 1-19.
6. Amatriain X., & Basilico J. (2015). Recommender systems in industry: A Netflix case study. In *Recommender systems handbook* (pp. 385-419). Springer, Boston, MA.
7. Das A. S., Datar M., Garg A., & Rajaram S. (2007, May). Google news personalization: scalable online collaborative filtering. In *Proceedings of the 16th international conference on World Wide Web* (pp. 271-280).
8. Grasso A., Glance N. S., & Meunier J. L. (2008). U.S. Patent No. 7,386,547. Washington, DC: U.S. Patent and Trademark Office.
9. Smith B., & Linden G. (2017). Two decades of recommender systems at Amazon. *com. IEEE internet computing*, 21(3), 12-18.
10. Mladenic D. (1999). Text-learning and related intelligent agents: a survey. *IEEE intelligent systems and their applications*, 14(4), 44-54.
11. Schafer J. B., Konstan J., & Riedl J. (1999, November). Recommender systems in e-commerce. In *Proceedings of the 1st ACM conference on Electronic commerce* (pp. 158-166).
12. Çano E., & Morisio M. (2017). Hybrid recommender systems: A systematic literature review. *Intelligent Data Analysis*, 21(6), 1487-1524.
13. Liu F., Tang R., Li X., Zhang W., Ye Y., Chen H., Zhang, Y. (2018). Deep reinforcement learning based recommendation with explicit user-item interactions modeling. *arXiv preprint arXiv:1810.12027*.
14. Choi S., Ha H., Hwang U., Kim C., Ha J. W., & Yoon S. (2018). Reinforcement learning based recommender system using biclustering technique. *arXiv preprint arXiv:1801.05532*.
15. Maqbool S. D., Ahamed T. I., & Malik N. H. (2011, December). Analysis of adaptability of Reinforcement Learning approach. In *2011 IEEE 14th International Multitopic Conference* (pp. 45-49). IEEE.
16. Mabu S., Tjahjadi A., & Hirasawa K. (2012). Adaptability analysis of genetic network programming with reinforcement learning in dynamically changing environments. *Expert Systems with Applications*, 39(16), 12349-12357.
17. Neftci E. O., & Averbek B. B. (2019). Reinforcement learning in artificial and biological systems. *Nature Machine Intelligence*, 1(3), 133-143.
18. Polydoros A. S., & Nalpantidis L. (2017). Survey of model-based reinforcement learning: Applications on robotics. *Journal of Intelligent & Robotic Systems*, 86(2), 153-173.
19. Yang T., Zhao, L., Li W., & Zomaya A. Y. (2020). Reinforcement learning in sustainable energy and electric systems: A survey. *Annual Reviews in Control*.

20. Iglesias A., Martínez P., Aler R., & Fernández F. (2009). Learning teaching strategies in an adaptive and intelligent educational system through reinforcement learning. *Applied Intelligence*, 31(1), 89-106.
21. Epureanu B. I., Li X., Nassehi A., & Koren Y. (2020). Self-repair of smart manufacturing systems by deep reinforcement learning. *CIRP Annals*, 69(1), 421-424.
22. Taghipour N., & Kardan A. (2008, March). A hybrid web recommender system based on q-learning. In *Proceedings of the 2008 ACM symposium on Applied computing* (pp. 1164-1168).
23. Zhao X., Zhang L., Xia L., Ding Z., Yin D., & Tang J. (2017). Deep reinforcement learning for list-wise recommendations. *arXiv preprint arXiv:1801.00209*.
24. Zhao X., Zhang L., Ding Z., Xia L., Tang J., & Yin D. (2018, July). Recommendations with negative feedback via pairwise deep reinforcement learning. In *Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining* (pp. 1040-1048).
25. Zhao, X., Gu, C., Zhang, H., Liu, X., Yang, X., & Tang, J. (2019). Deep Reinforcement Learning for Online Advertising in Recommender Systems. *arXiv preprint arXiv:1909.03602*.
26. Zou L., Xia L., Ding Z., Song J., Liu W., & Yin D. (2019, July). Reinforcement learning to optimize long-term user engagement in recommender systems. In *Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining* (pp. 2810-2818).
27. Xin X., Karatzoglou A., Arapakis I., & Jose J. M. (2020, July). Self-Supervised Reinforcement Learning for Recommender Systems. In *Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval* (pp. 931-940).
28. Li L., Chu W., Langford J., & Schapire R. E. (2010, April). A contextual-bandit approach to personalized news article recommendation. In *Proceedings of the 19th international conference on World wide web* (pp. 661-670).
29. Munemasa I., Tomomatsu Y., Hayashi K., & Takagi T. (2018, March). Deep reinforcement learning for recommender systems. In *2018 international conference on information and communications technology (icoiact)* (pp. 226-233). IEEE.
30. Ricci F., Rokach L., & Shapira B. (2015). Recommender systems: introduction and challenges. In *Recommender systems handbook* (pp. 1-34). Springer, Boston, MA.
31. Koren Y., & Bell R. (2015). Advances in collaborative filtering. *Recommender systems handbook*, 77-118.
32. Cheng W., Shen Y., Zhu Y., & Huang L. (2018). Explaining Latent Factor Models for Recommendation with Influence Functions. *arXiv preprint arXiv:1811.08120*.
33. Su X., & Khoshgoftaar T. M. (2009). A survey of collaborative filtering techniques. *Advances in artificial intelligence*, 2009.
34. Bokde D., Girase S., & Mukhopadhyay D. (2015). Matrix factorization model in collaborative filtering algorithms: A survey. *Procedia Computer Science*, 49, 136-146.
35. Wu L. (2020). Advances in Collaborative Filtering and Ranking. *arXiv preprint arXiv: 2002.12312*.
36. Wang X., Jin H., Zhang A., He X., Xu T., & Chua T. S. (2020, July). Disentangled Graph Collaborative Filtering. In *Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval* (pp. 1001-1010).
37. Bonet E. R., Nguyen D. M., & Deligiannis N. (2020). Temporal Collaborative Filtering with Graph Convolutional Neural Networks. *arXiv preprint arXiv:2010.06425*.
38. Li X., Zhang M., Wu S., Liu Z., Wang L., & Yu P. S. (2021). Dynamic graph collaborative filtering. *arXiv preprint arXiv:2101.02844*.
39. Maimon O., Rokach L. (2010), „Data Mining and Knowledge Discovery Handbook”, Springer
40. Strehl A., Ghosh J., & Mooney R. (2000, July). Impact of similarity measures on web-page clustering. In *Workshop on artificial intelligence for web search (AAAI 2000)* (Vol. 58, p. 64).
41. Grad-Gyenge, L., Kiss, A., & Filzmoser, P. (2017, July). Graph embedding based recommendation techniques on the knowledge graph. In *Adjunct publication of the 25th conference on user modeling, adaptation and personalization* (pp. 354-359).
42. Chen T., Hong L., Shi Y., & Sun Y. (2017). Joint text embedding for personalized content-based recommendation. *arXiv preprint arXiv:1706.01084*.
43. Shi C., Hu B., Zhao W. X., & Philip S. Y. (2018). Heterogeneous information network embedding for recommendation. *IEEE Transactions on Knowledge and Data Engineering*, 31(2), 357-370
44. Grbovic M., & Cheng H. (2018, July). Real-time personalization using embeddings for search ranking at airbnb. In *Proceedings of the 24th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining* (pp. 311-320).



45. Zhao Z., Zhang X., Zhou H., Li C., Gong M., & Wang Y. (2020). HetNERec: Heterogeneous network embedding based recommendation. *Knowledge-Based Systems*, 204, 106218.
46. Palumbo E., Monti D., Rizzo G., Troncy R., & Baralis E. (2020). entity2rec: Property-specific knowledge graph embeddings for item recommendation. *Expert Systems with Applications*, 151, 113235.
47. Talwar K. S., Oraganti A., Mahajan, N., & Narsale, P. (2015). Recommendation System using Apriori Algorithm. *Int. J. Sci. Res. Dev*, 3(01), 183-185.
48. Agrawal R., & Srikant R. (1994, September). Fast algorithms for mining association rules. In *Proc. 20th int. conf. very large data bases, VLDB (Vol. 1215, pp. 487-499)*.
49. Aher, S. B., & Lobo, L. (2012, August). Applicability of data mining algorithms for recommendation system in e-learning. In *Proceedings of the International Conference on Advances in Computing, Communications and Informatics (pp. 1034-1040)*.
50. Zhang H., Huang, T., Lv, Z., Liu S., & Zhou Z. (2018). MCRS: A course recommendation system for MOOCs. *Multimedia Tools and Applications*, 77(6), 7051-7069.
51. Liu L., Yu S., Wei X., & Ning Z. (2018). An improved Apriori-based algorithm for friends recommendation in microblog. *International Journal of Communication Systems*, 31(2), e3453.
52. More N., & More N. P. (2014). Recommendation of books using improved apriori algorithm. *Int. J. Innov. Res. Sci. Technol*, 1(4), 80-82.
53. Zhou Y. (2020). Design and implementation of book recommendation management system based on improved Apriori algorithm. *Intelligent Information Management*, 12(3), 75-87.
54. Ying H. (2012). Application of Improved Apriori Algorithm in E-Commerce Recommendation System. *Computer & Digital Engineering*, 08.
55. Wang C., & Zheng X. (2020). Application of improved time series Apriori algorithm by frequent itemsets in association rule data mining based on temporal constraint. *Evolutionary Intelligence*, 13(1), 39-49.
56. Yao F., Li A., & Wang, Q. (2020, November). Bi-Apriori-Based Association Discovery via Alarm Logs. In *International Conference on Machine Learning and Big Data Analytics for IoT Security and Privacy (pp. 621-632)*. Springer, Cham.
57. Kantardzic, M. (2019). *Data mining: concepts, models, methods, and algorithms*, 3rd Edition, John Wiley & Sons.
58. Rebala, G., Ravi, A., & Churiwala, S. (2019). Reinforcement Learning Algorithms. In *An Introduction to Machine Learning (pp. 213-241)*. Springer, Cham.
59. Mohri M., Rostamizadeh A., & Talwalkar A. (2018). *Foundations of machine learning*. MIT press.
60. Liu F., Tang R., Li X., Zhang W., Ye Y., Chen H., He X. (2020). State representation modeling for deep reinforcement learning based recommendation. *Knowledge-Based Systems*, 205, 106170.
61. le E., Jain V., Wang J., Narvekar S., Agarwal R., Wu R., & Boutilier, C. (2019). Reinforcement learning for slate-based recommender systems: A tractable decomposition and practical methodology. *arXiv preprint arXiv:1905.12767*.
62. Zhou S., Dai X., Chen H., Zhang W., Ren K., Tang R., Yu Y. (2020, July). Interactive recommender system via knowledge graph-enhanced reinforcement learning. In *Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (pp. 179-188)*.
63. Kotu V., Deshpande B. (2018). *Data science: concepts and practice*. Morgan Kaufmann.
64. Sutton R. S., & Barto A. G. (2018). *Reinforcement learning: An introduction*. MIT press.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).10](https://doi.org/10.52326/jss.utm.2021.4(2).10)  
UDC 336.1:657(910)



## IMPLEMENTATION OF GOVERNMENT FINANCIAL INFORMATION SYSTEMS TOWARD LOCAL GOVERNMENT FINANCIAL STATEMENTS: CASE STUDY IN DELI SERDANG, INDONESIA

Fitri Yani Panggabean\* ORCID ID: 0000-0002-0589-1223

*Universitas Pembangunan Panca Budi, Gatot Subroto street, Medan, Indonesia*

*\*fitriyani@dosen.pancabudi.ac.id*

Received: 04. 22. 2021

Accepted: 05. 19. 2021

**Abstract.** This paper aims to determine how the application of government financial accounting systems for financial statements government in the Deli Serdang district. The autonomy that has been carried out since 1999 in Indonesia refers to Law number 32 of 2004, which has been revised. Thus, local governments are given the authority to manage finances independently. The use of finance must be carried out accountably and transparently. The study was conducted in the Deli Serdang regency government – Indonesia, with descriptive qualitative research. The data were obtained primarily by the documentation technique, which is a regional financial statement document for two years, a central and local government regulation document. The results showed that; 1) preparation of financial statements, the Deli Serdang regency government has implemented a financial accounting system with inadequate equipment such as an uncomputerized system that has delayed financial statements; 2) delays in financial statements are also caused by unskilled human resources and a bit number of employees for the application of government financial accounting systems; 3) financial statements at the end of the year found that the calculation of the budget, calculation of the budget memorandum, cash flow, and balance sheets are in accordance. However, it is constrained by the unavailability of data comparisons with the previous year; and 4) the structure of government financial management organizations in the form of a direct line, in which leaders and employees have direct responsibility regarding their duties. This can facilitate the coordination of supervisors for the better.

**Keywords:** *Government financial information systems, accounting systems, financial statements.*

**Rezumat.** Lucrarea își propune să stabilească modul în care aplicarea sistemelor de contabilitate financiară guvernamentale pentru situații financiare este guvernată în districtul Deli Serdang. Autonomia care se desfășoară din 1999 în Indonezia se referă la Legea nr. 32 din 2004, care a fost revizuită. Astfel, guvernelor locale li se acordă autoritatea de a-și gestiona finanțele în mod independent. Utilizarea finanțelor trebuie realizată în mod responsabil și transparent. Studiul a fost realizat în guvernul de regență Deli Serdang - Indonezia, cu cercetări calitative descriptive. Datele au fost obținute în principal prin

tehnica de documentare, un document de reglementare a guvernului central și local de situație financiară regională timp de doi ani. Rezultatele au arătat: 1) pregătirea situațiilor financiare - guvernul de regență Deli Serdang a implementat un sistem de contabilitate financiară cu echipamente inadecvate, cum ar fi un sistem necomputerizat care a întârziat situațiile financiare; 2) întârzierile în situațiile financiare sunt cauzate și de resurse umane necalificate și de un număr mic de angajați pentru aplicarea sistemelor de contabilitate financiară guvernamentale; 3) situațiile financiare de la sfârșitul anului au constatat că calculul bugetului, calculul memorandumului bugetar, fluxul de numerar și bilanțurile sunt conforme. Cu toate acestea, este constrâns de indisponibilitatea comparațiilor de date cu anul precedent; și 4) structura organizațiilor guvernamentale de management financiar sub forma unei linii directe, în care liderii și angajații au responsabilitatea directă cu privire la atribuțiile lor. Acest lucru poate facilita coordonarea supravegheților în bine.

**Cuvinte cheie:** *Sisteme de informații financiare guvernamentale, sisteme contabile, situații financiare.*

### **Introduction**

Autonomy has been rolled out in Indonesia since 1999 with the enactment of Law Number 22 of 1999 [2] and then revised with Law number 32 of 2004 [1]. With this autonomy, local government are given the authority to manage their finances. This finance must, of course, be carried out accountably and transparently. The basic consideration is the conditions in the country and abroad. Domestic conditions indicate that people want openness and independence (decentralization).

With Law number 32 of 2004 [1] concerning local government and Law number 33 of 2004 [3] concerning fiscal balance between the central and local governments, there is a substantial change in regional management. This is due to local financial management is a tool to manage and regulate the needs of local governments to provide services to the community. Decentralization in accordance with Law number 22 of 1999 [2] concerning regional government and Law number 25 of 1999 [4] concerning central and local fiscal balance was implemented in 2001.

Efficiency and effectiveness in organizing governance need to be improved by paying attention to aspects of the relationship between the composition of the local government, the potential and diversity of the region, opportunities and challenges of global competition, by giving the widest possible authority to local governments accompanied by granting the rights and responsibility of carrying out autonomy in unity government administration system. The implementation of the principle of good governance in the reform period requires a paradigm shift in thinking and acting for all elements of the bureaucracy of the central and local governments.

Minister of Home Affairs Regulation number 29 of 2002 [5], implies that for the effectiveness objectives for managing the funds under its management, regional governments are required to prepare regional financial reports as part of the accountability reports of the heads of local governments. Therefore, the Deli Serdang regency government, which is a district in North Sumatra, is required to prepare a government financial accountability statement that includes the regional balance sheet, the budget of regional income and expenditure (Anggaran Pendapatan dan Belanja Daerah/APBD) statements, APBD memorandum, and cash flow statement.

For the sake of compiling good financial statements, certainly not an easy job, it requires quality human resources and equipment used to support the application of the regional financial accounting system in preparing regional financial statements. Human resources are the financial managers of government administrators. Implementation of the government financial accounting system requires a thorough understanding of the implementation of government financial management and the continual improvement of the authorized institutions so that the creation of performance accountability of local government agencies as part of good governance can become a reality.

Government Regulation number 8 of 2006 clause 11 [6], concerning government financial accounting systems and reporting deadlines, that;

- 1) The regional financial management official compiles the financial statements of the local government to be submitted to the Governor/Regent/Mayor to fulfill the accountability of the APBD implementation.
- 2) The financial reports of the local governments as referred to in paragraph (1) shall be prepared based on the financial statements of the Regional Work Unit (Satuan Perangkat Kerja Daerah/SKPD) and the accountability report on the management of the regional treasury.
- 3) The financial reports referred to in paragraph (1) shall be submitted by the Governor/Regent/Mayor to the Audit Board of the Republic Indonesia (Badan Pemeriksa Keuangan/BPK) no later than 3 (three) months after the end of the fiscal year.

Based on the above, the authors would like to know what caused the delay in the implementation of the government financial accounting systems, so that the local government experienced a delay in reporting it. Based on the description above, the focus of the study aims to trace the application of the government financial accounting systems in the preparation of financial reports in the Deli Serdang regency government.

### **1. Government Financial Accounting Systems**

The government accounting system at the central government level is regulated by financial minister regulations, while at the local government level governor/regent/mayor govern the regional regulations regarding regional financial management and are guided by government regulations regarding Government Accounting Systems. According to Panggabean and Dame [7], regional financial accounting is the accounting used by local governments to manage and manage regional finances. Local government financial accounting is part of the discipline of accounting that has its characteristics different from commercial accounting, namely (1) not aimed at measuring profits; (2) no owner's interests; (3) the existence of budget accounting.

The development of a government accounting system requires a relatively long time. Moreover, the development of this system began together with the reform of local financial management, in terms of planning and budgeting, treasury and accounting, including local cash management. Therefore the development of the system is very closely related to changes in these factors. All of these things can be run simultaneously.

The information generated from the accounting information system process is contained in the financial statements consisting of 1) budget realization, 2) balance sheet, 3) cash flow and 4) notes to financial statements. In addition to the four elements of the financial statement elements stated above, each region is required to submit information

relating to local finance, namely the financial statements of the Regional Owned Enterprises and data relating to the needs and economic potential of the region.

Accounting information data reported is associated with non-financial data such as statistical data that allows government agencies to assess efficiency, to the extent that resources have been used economically and an assessment of the effectiveness of an agency can provide optimum services with available resources, including assessing whether the results of a program can achieve the intended consequences. For example, programs launched to tackle poverty, eradicate infectious diseases, eradicate crime or reduce school drop-out programs, have been successful by their objectives.

Based on the description above, explicitly explain the context of using accounting information data to evaluate the extent to which public policies are implemented by program managers and adhere to the achievement of goals within the specified funding limits. By comparing budget terms with realization, it can be determined how much is spent and in certain areas and spending patterns, where differences have been anticipated previously.

## **2. The Policy of Government Financial Accounting System Development**

Based on Government Regulation number 105 of 2000 [8], the local government must determine the accounting system used in the form of regional regulations. The development of the accounting system must be guided by the principles of developing the accounting system stipulated by the Minister of Home Affairs Regulation number 29 of 2002 [5]. The regulation only regulates the main matters, in connection with that the local government by the authority obtained by Government Regulation number 105 years 2000 [8], must develop an accounting system that can produce regional financial statements by these guidelines that take into account the situation and conditions of each region. In the Decree of the Minister of Home Affairs number 29 of 2002 [5] also stated that the accounting system was prepared by Government Financial Accounting Standards. Therefore, if there are discrepancies, among other things, the items regulated in the Decree of the Minister of Home Affairs and Local Government Accounting Standards should refer to Government Financial Accounting Standards.

## **3. Regional Financial Report**

According to Government Regulation number 71 of 2010 [9] concerning Government Accounting Standards, financial statements are prepared to provide relevant information concerning the financial position and all transactions carried out by a recording entity during one reporting period. The term "Local Government Financial Statements" includes all reports and several explanations that acknowledge the report will be recognized as part of the financial statements.

According to Kasmir [10], the purpose of making financial statements is to provide information about; (1) type and amount of assets owned by the company at the present; (2) type and amount of liabilities and capital owned by the company at the present; (3) the type and amount of income earned in a certain period; (4) the amount and type of costs incurred by the company in a certain period; (5) changes that occur in assets, liabilities, and capital; (6) company management performance in a period; (7) notes to the financial statements; and (8) other financial information.

Local financial statements are structured representations of the financial position of transactions carried out by a local government entity. The general objective is to have a

predictive and prospective role, to provide information that is useful for predicting the number of resources needed and resources resulting from ongoing operations, and associated risks and uncertainties. Each financial statement entity must report on the efforts made and the results achieved in carrying out activities in a systematic and structured manner during a reporting period for accountability, managerial, transparency, and intergenerational equity.

First, *accountability*, responsible management of resources and the implementation of policies entrusted to the command entity in achieving the objectives that have been set periodically. Second, *managerial*, helps users to evaluate the implementation of the activities of a government entity in the reporting period, thus facilitating the planning, management and control functions of all assets, liabilities and government entities for the benefit of the community. Third, *transparency*, providing open and honest financial information to the community based on the consideration that the public has the right to know openly and comprehensively the responsibility of the government in managing the resources used to it and its compliance with laws and regulations. Finally, *intergenerational equity*, can be seen in capital expenditure transactions originating from loan funds. To improve the objective and disciplined abilities of the local government in carrying out loan repayments, careful and prudent care is needed, in the management of this loan which aims to further regulate matters relating to local government loans by anticipating future needs and taking into account the need to maintain conditions strength and sustainability of the national economy.

## **Method**

This type of research is qualitative. This research was conducted to analyze the application of regional financial accounting systems in the preparation of financial statements. The type of data in this paper is primary data, sourced from the 2013 and 2014 local financial statement documents, obtained from the Local Financial Management Agency of the Deli Serdang regency government – Indonesia, central and local government regulatory documents, and study literature. The data analysis technique used is a qualitative description technique.

## **Results and Discussion**

### **1. Geographical Description**

The Deli Serdang regency is located between 2°57' - 3°16' North Latitude and 98°33' - 99°27' East Longitude which is part of the region in a cross position in the western Pacific trough region. With an area of 2,391.62 km<sup>2</sup> (139,462 Ha). Administratively it consists of 24 sub-districts with 380 villages and 14 suburbs. Deli Serdang regency is bordered to the north by Langkat regency and the Malacca Strait, south by Karo regency, west by Langkat regency and Karo regency, east by Serdang Bedagai regency.

This area is geographically located in the development area of the east coast of Sumatra and has a varied topography and climate, based on the topography, the Deli Serdang region is divided into three parts; 1) The coastal area is ± 63,002 Ha (26.30%) consisting of 4 sub-districts (Hamparan Perak, Labuhan Deli, Percut Sei Tuan and Pantai Labu), the number of villages is 64 with a beach length of ± 62 km. The main potentials are agriculture, food, small holder plantations, large estates, marine fisheries, mining, poultry farming, and tourism; 2) The land area is ± 68,965 Ha (28.80%) consisting of 11 districts (Sunggal, Pancur Baru, Namorambe, Deli Tua, Batang Kuis, Tanjung Morawa, Patumbak,

Lubuk Pakam, Beringin, Pagar Merbau), the number of villages is 197; and 3) The highland area is ± 111,970 Ha (44.90%) consisting of 7 subdistricts (Kutalimbaru, Sibolangit, Sibiru-Biru, STM Hilir, STM Hulu, Gunung Meriah, Bangun Purba). The number of villages is 133. The main potentials are smallholder agriculture, plantations, and livestock farming.

The total population at the end of 2014 was ± 1,463,031 people and was the largest population in North Sumatra with a population growth rate of 2.09% and an average density of 598 people / km<sup>2</sup> while the composition of the population's livelihood was farmers 60.22%, employees state or employees 21.83%, traders 5.40%, fishermen 2.86%, services 3.17%, craftsmen 0.40% and others 6.12% [11].

## **2. Government Organizational Structure**

The government structure of Deli Serdang regency consists of; (1) government administrative assistants and municipal administration, consisting of (a) government and civil service sections, (b) village government sections, (c) legal and legislative sections; (2) the administrative assistant for development, consisting of (a) the administration of economic development, (b) the administration of facilities and infrastructure, (d) the administration of socio-cultural development; and (3) general administrative assistant, consisting of, (a) the apparatus empowerment section, (b) the financial section, (c) the equipment and maintenance section, (d) the general section.

## **3. Government Financial Statements**

Government financial reports are reports on the responsibility of local governments for financial activities and economic resources that are enriched and show financial position by government financial accounting standards. The report is reflected in the local government financial statements consisting of 1) APBD statement; 2) APBD memorandum; 3) balance; and 4) cash flow statement.

The Deli Serdang regency government has compiled financial reports, which are referred to as the APBD reports of physical and financial realization per direct expenditure budget activities managed by the Deli Serdang regency government, in which the report preparation process is explained as follows;

- 1) The process of determining the basic budget plan, the activities carried out are:
  - a) The finance department, in charge of managing regional revenue sources together, estimates the target budget for revenue and development,
  - b) The department of determining the budget plan obtained by the Deli Serdang regency government is based on a circular from the Regent,
  - c) The development planning agency of the Deli Serdang regency government, the finance department, the part of the process of preparing the program together determine the development budget plan based on the priority scale of programs and projects in the five-year regional development plan.
- 2) The process of determining the development project, the activities carried out are;
  - a) repara and propose physical planning and details of project financing to be implemented,
  - b) conduct research on projects based on the scale of development priorities,
  - c) The finance department and the program preparation section will calculate the amount of research and the amount of research funding needed.
- 3) The process of determining the costs in the contract, the activities carried out are:

- a) The finance and program drafting division will conduct a tender, which is to make contracts and offer prices to the consultants.
  - b) The winner of the tender will be the company working on the contract for the project to be implemented.
  - c) The company before accepting payment transactions from the government is required to inspect the goods and get them recorded in the News of Inspection of Goods.
  - d) The finance and program preparation department will issue a News of Receipt of goods to the company after the company has made the payment transaction and received the payment receipt as proof of payment.
- 4) Expenditure determination process
- a) The local government prepares and plans proposed activities, a list of project contents and an authorization decision letter, in which the authorization decision letter is submitted to the Regent of Deli Serdang,
  - b) then the Regent of Deli Serdang issued an authorization decision letter by the stipulated conditions,
  - c) The decree of the Regent of Deli Serdang was issued as an approval of the implementation of the development budget by the stipulated budget amount. Then the finance department issued a sum of money in the form of a check by a predetermined budget amount.

The financial accounting system implemented by the Deli Serdang regency government is the regional financial accounting system determined by Government Regulation 105 of 2000 [8]. This accounting system is different from the accounting system used before 2000, resulting in differences in the structure of financial statement formats. With the development of technology, the accounting system was developed computerized. The local government has made this happen by equipping its offices with a set of computers (hardware and software) that they need.

However, although local governments have used a computerized system in preparing financial statements, they are still experiencing delays. This is caused by human resource factors that cannot use the application system optimally and also an inadequate number of computers. Therefore, to further optimize the application of local financial accounting systems in the preparation of financial statements, local governments should provide training in the use of local financial accounting systems. Likewise with the educational background of employees who work in finance must have an economic-accounting-computer knowledge base.

With the existence of a regional local accounting system that can meet the demands of financial accountability which is one of the principles of good governance so that public trust, the legislature, the business world, the public, and investors will be created. Increasing trust and providing reliable information to stakeholders will be very useful in efforts to improve local government performance.

The main obstacle is the unintegrated development of a financial management system that includes planning, budgeting, treasury, accounting, information systems, and auditing sub-systems. The guidelines issued are still partial and often do not match, so there must be an adjustment or conversion from one subsystem to another. Another obstacle is human resources, considering that the development of government accounting in Indonesia is not as fast as the development of commercial accounting, so far there are



still few human resources who understand government accounting. Likewise with the lack of concern in the local government environment to base decisions on financial information.

Financial management procedures performed by the regency government consist of cash receipt procedures, cash disbursement procedures, and financial reporting. The procedure for cash receipts consists of regional tax receipts, local retribution directly to the local government treasury, all monetary value benefits in the form of commissions, rebates, interest deductions or other as a result of the sale or procurement of goods and the placement of local regional money is local income, and local income is paid fully on time to the local treasury in accordance with what was done by the local government.

The cash disbursement procedure consists of all expenses supported by complete evidence, the use of regional budgets that use pay orders to make payments. Likewise with employees who give authority to certify the evidence on which cash disbursements are based. This cash disbursement procedure is also by Government Regulation number 105 of 2000 [8] and Government Regulation number 108 of 2000 [12].

Reporting accountability at the end of the year consisting of APBD statements, APBD memorandum, cash flow statements, and balance sheets are appropriate. However, the accountability report format in the APBD statements is not appropriate because there is no comparison with the previous year, only limited to one period while in government regulation number 108 of 2000 there must be a comparison of one current period with the previous period. The financial reporting of the Deli Serdang regency government has used multiple accounting procedures although manually, as well as the cash flow statements that have listed the balance of the beginning of the previous year by Government Regulation number 105 of 2000 [8] and Government Regulation number 108 of 2000 [12]. The balance sheet on the Government of Deli Serdang regency has been used the L Account.

### **Conclusion**

While preparing the financial statements, the Deli Serdang regency government has used a local financial accounting system with inadequate equipment, which is a computerized system that is not yet understood and internet network infrastructure is still lacking so that the preparation of financial statements has been delayed. Another cause of delay in the preparation of financial statements, one of which is human resources. Skilled and cognitive human resources using the application of local financial accounting systems in local governments have not been sufficient, so the preparation of financial reports that have used regional financial accounting systems has been delayed. The organizational structure of the local government's financial management is in the form of a direct line, in which the leader has several subordinates and direct responsibility regarding his duties. This can facilitate coordination between leaders and employees and facilitate supervision.

### **References**

- 1 Law of the Republic of Indonesia number 32 of 2004 concerning local government.
- 2 Law of the Republic of Indonesia number 22 of 1999 concerning local government.
- 3 Law of the Republic of Indonesia number 33 of 2004 concerning fiscal balance between the central and local government.
- 4 Law of the Republic of Indonesia number 25 of 1999 concerning central and local fiscal balance.
- 5 Minister of Home Affairs Regulation of the Republic of Indonesia number 29 of 2002 concerning Guidelines for the Preparation of Regional Financial Accountability and Procedures for Supervision of the Compilation and Calculation of the State Budget.

- 6 Government Regulation of the Republic of Indonesia number 8 of 2006 concerning Regional Financial.
- 7 Panggabean, F.Y & Dame, I. Pengaruh Penerapan Sistem Keuangan Daerah, Transparansi Publik dan Aktivitas Pengendalian Terhadap Akuntabilitas Keuangan di Kantor Kecamatan Kota Medan. *Jurnal Akuntansi Bisnis dan Publik*, 2018, 9 (1), pp.80-96. <http://jurnal.pancabudi.ac.id/index.php/akuntansibisnisdanpublik/article/view/367>
- 8 Government Regulation of the Republic of Indonesia number 105 of 2000 concerning Management and Accountability of Regional Finances.
- 9 Government Regulation of the Republic of Indonesia number 71 of 2010 concerning Government Accounting Standards.
- 10 Kasmir. Analisis Laporan Keuangan. Jakarta : Raja Grafindo Persada Press, 210.
- 11 Central Statistics Agency. 2015. Deli Serdang in Figures of 2015. <https://deliserdangkab.bps.go.id/publication/download.html?nrbvfeve=NmZiZWE2NzQ0MjRiMjZkNDVkdjZmZDEz&xzmn=aHR0cHM6Ly9kZWxpc2VyZGFuZ2thYi5icHMuZ28uaWQvcHVibGljYXRpb24vMjAxNS8xMi8wOC82ZmJlYTY3NDQyNGlyNmQ0NWQ5NmZkMTMva2FidXBhdGVuLWRlbGktd2VyZGFuZy1kYWxhbS1hbmdrYS0yMDE1Lmh0bWw%3D&twoadfnofeuf=MjAyMS0wMi0wMSAyMDo0MDoyMw%3D%3D>
- 12 Government Regulation of the Republic of Indonesia number 108 of 2000 concerning Procedures for the Accountability of Regional Heads and Procedures for the Preparation and Regulation of Regional Budget.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).11](https://doi.org/10.52326/jss.utm.2021.4(2).11)  
UDC 004.7:621.391



## INTERNET OF THINGS (IOT) CONQUERS THE WHOLE GLOBE

Titu-Marius I. Băjenescu\*, ORCID ID: 0000-0002-9371-6766

Swiss Technology Association, Electronics Group Switzerland  
\*tmbajenesco@gmail.com

Received: 04.28.2021

Accepted: 05.22.2021

**Abstract.** The article examines the market for connected objects, which is gradually taking its place in the global economy. Autonomous cars, smartphones, video surveillance, connected objects are already present in our daily lives. However, it is in industry that the Internet of Things has developed the most. The Internet of Things, or IoT, is a concept defining the extension of the Internet to physical objects. This includes not only the connected objects, but also the sensors, software and network through which these objects operate. All connected objects are powered by software, which collects data - that are then processed in the cloud. They are, therefore, programmed and programmable objects that can interact via a WiFi, Bluetooth or 4G connection. Connected objects can be found in two main applications: an industrial application and an everyday application. In the industrial sector, connected objects are very well established in various sectors of activity: automotive, aeronautics, agriculture, health, commerce, public sector, logistics, etc. Everyday applications, known as consumer applications, are struggling to develop despite the announced Eldorado. Even though many connected everyday objects exist (toothbrushes, hoovers, watches, home automation, etc.), the business model is having trouble being set up and connected objects are having trouble proving their usefulness in everyday life. There needs to be consistency and logic in the range of connected products on offer and not just a range of independent products.

**Keywords:** *ATM, streaming video, file sharing, online shopping, banking, social networking, toothbrushes, hoovers, watches, home automation, social impact, medical applications.*

**Rezumat.** În articol este examinată piața obiectelor conectate, care își ia treptat locul în economia globală. Mașinile autonome, smartphone-urile, supravegherea video, obiectele conectate sunt deja prezente în viața noastră de zi cu zi. Cu toate acestea, Internetul obiectelor s-a dezvoltat cel mai mult în industrie. Internetul obiectelor, sau IoT, este un concept care definește extinderea internetului la obiectele fizice. Aceasta include nu numai obiectele conectate, ci și senzorii, software-ul și rețeaua prin care acționează aceste obiecte. Toate obiectele conectate sunt alimentate de software, care colectează date - care sunt apoi procesate în cloud. Prin urmare, acestea sunt obiecte programate și programabile care pot interacționa printr-o conexiune WiFi, Bluetooth sau 4G. Obiectele conectate pot fi



able to predict people's needs based on information gathered through context. These devices cannot only gather information from their environment, but are able to make decisions without human intervention. IoT technology is used in our everyday lives; she allows the opening of a door without having a key, automatic recognition of credit cards, automatic opening of door locks, reaching vehicle detection systems, toll payment systems on highways; IoT technology is used for animal tracking and tracing, access control, payment systems using *contact-less* chip cards, anti-theft devices, etc. The building blocks of IoT are built on devices that allow them to be networked; they provide common platforms that allow them to communicate with each other, developing new applications to conquer new users [1].

The Internet is now widely used by more than a billion people for a multitude of services: searching for information, streaming video, file sharing, online shopping, banking, social networking, etc [2]. While the Internet continues to evolve, it will not only be able to allow people to communicate with each other or with a service; it will also allow objects to connect to each other to obtain and share information or to take an action. This is commonly referred to as the Internet of Things IoT and it provides the basis for the next Internet and Web 3.0 (Figure 2). As the potential number of devices that could be connected to the Internet grows, the volume of traffic generated explodes; it will be necessary to reconsider the protocols that will support the IoT. Most IoT projects are motivated by the need to reduce costs or increase revenue.

Translated as closely as possible to the meaning of the words, the Internet of Things is nothing more than networking objects, connecting them. An object can be a car, a toothbrush, a wristwatch, a TV, etc.

IoT is starting to take over entire sectors - such as healthcare, transport, agriculture and even industry. Studies have shown that thanks to IoT - the third wave of the Internet - by 2020, more than 26 billion objects will be connected, representing a market worth more than \$300 billion.

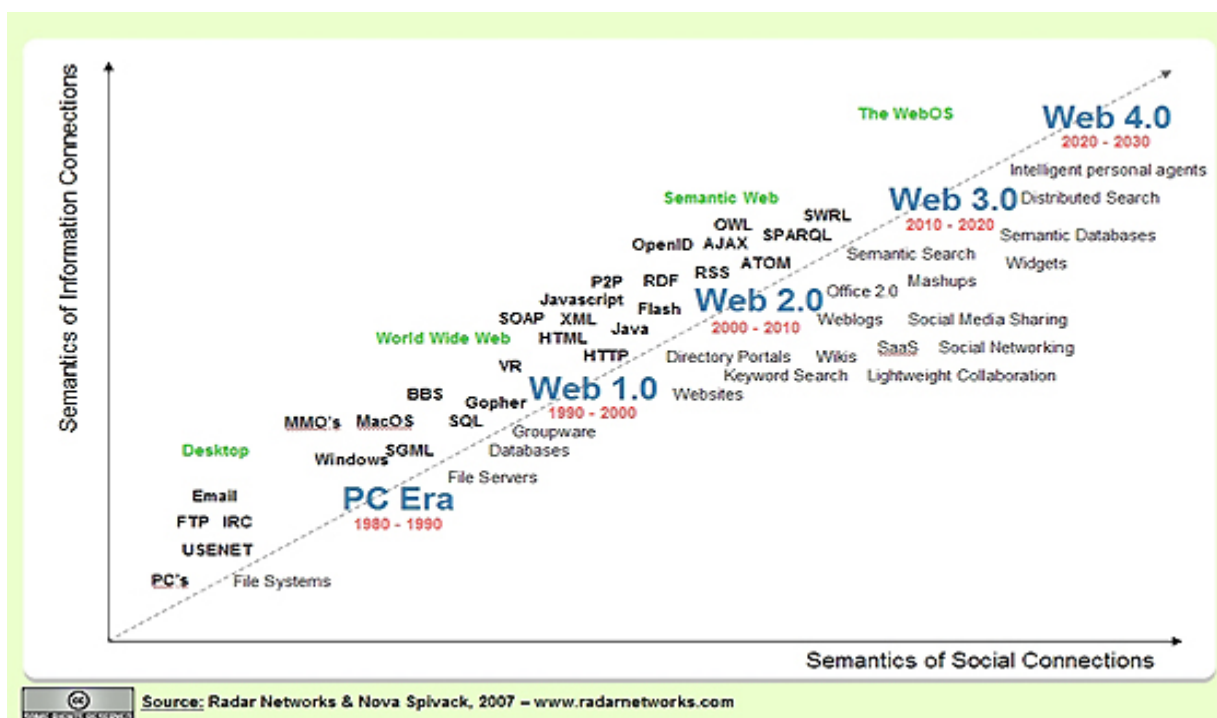
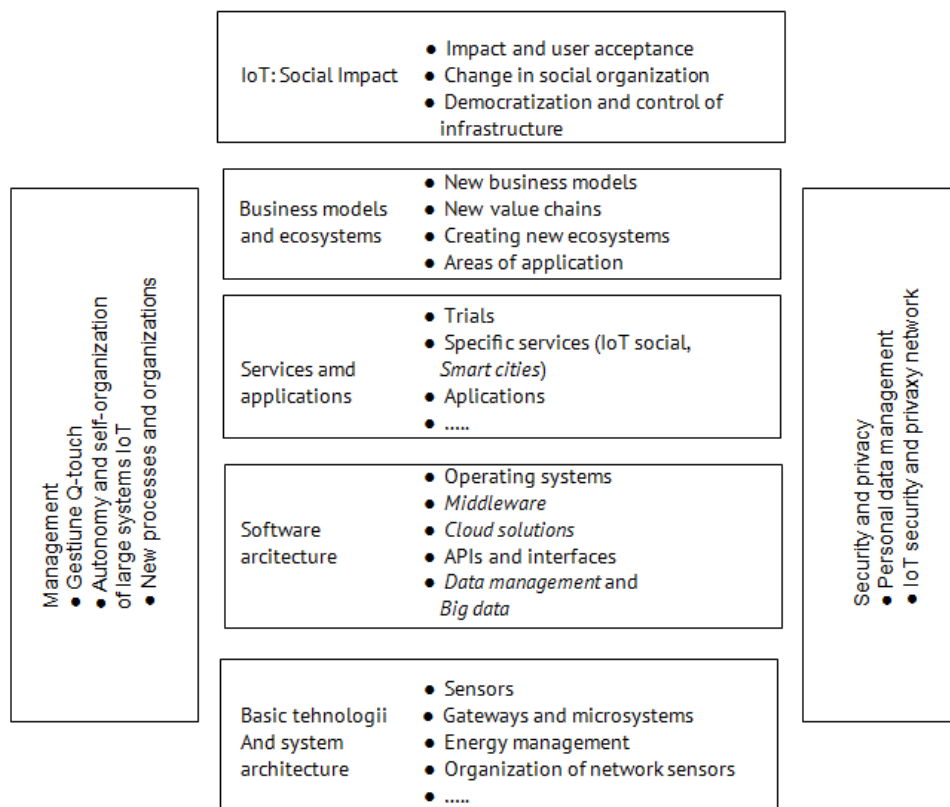


Figure 2. The Internet of Things provides the basis for the next Internet and Web 3.0.

According to the *BI Intelligence* report, IoT will be the world's largest market for electronic devices. In 2019, the number of connected computers, touch tablets and cars doubled compared to 2018. This explains why most companies have created special departments or cells dedicated to IoT, from IT service companies to large industrial groups [3]. IoT is a typical example of big data. For viable solutions, artificial intelligence (AI) techniques are considered the best choice. Therefore, IoT combined with AI techniques is the best choice; it allows us to have smart applications - such as smart e-health, smart metering and smart city. Although IoT is on everyone's mind today, security issues must be at the forefront to prevent an intruder from causing disastrous consequences.

IoT is a world of interconnected objects capable of perceiving, acting and communicating with each other and with the environment (in other words: smart things or objects) while providing the ability to share/share information and to act, in part, autonomously from real/physical world events, triggering processes and creating services with or without direct human intervention [4].

Kevin Ashton was the first to use the term *Internet of Things* (IoT) in 1999, in the context of supply chain management with radio frequency identifiers (RFID) that provide greater business efficiency and accountability.



**Figure 3.** Technological and social aspects of IoT.

### Some definitions

Since IoT is constantly evolving - and its definition continues to evolve. Accordingly, the IEEE IoT initiative provides an opportunity for members of the international community to help define IoT (*IEEE, 2015, 2017*). The document presents two definitions, one for small-scale scenarios: "An IoT is a network that connects uniquely identifiable objects over the Internet. The objects have sensing/actuation and potential programmability capabilities."

By exploiting a unique identification and a unique meaning, information about the "object" can be gathered and the state of "things" can be changed from anywhere, anytime, by anyone. The second definition is for large-scale scenarios: "IoT envisages a self-configuring, complex and adaptive network that interconnects "things" with the Internet using standard communication protocols. The interconnected objects have a physical or virtual representation in the digital world, a sensing capability, an actuation capability, a programmable feature and can be uniquely identified. The representation contains information including object identity, status, location or any other relevant commercial, social or private information [5]. Objects provide services, with or without human intervention, by exploiting unique identification, data capture and communication, and actuation capability. The service is operated through the use of intelligent interfaces, is available anywhere, anytime and for anything, taking into account security.

As technology advances, our interaction with computer systems is changing, both at work and at leisure. Information, sensor and network technology is becoming more powerful and more frequently used. People are no longer confronted with information technology only at the common points of their lives - such as at home or in the office - but also in information and communication infrastructures, present in increasingly important areas of everyday life. These infrastructures are characterized by the fact that they include not only traditional devices - e.g. PCs and mobile phones; information and communication technology is also embedded in objects and environments.

By physically embedding *IoT*, everyday objects and our everyday environment become 'smart', i.e. able to process and deliver information, but not necessarily smart in the sense of human cognitive intelligence.

### **Genesis of IoT**

In many people's minds, the Internet of Things is a revolutionary concept. Ask an embedded/embedded systems engineer the question and they will tell you that IoT is just a natural evolution. Embedded electronic systems have been around for a long time, most of them autonomous. The ability of these embedded systems to communicate with other systems gave birth to IoT. Indeed, before the democratization of IoT, machines could already communicate with each other, and exchange information, using protocols such as RS232, RS484, etc. Broadening the modes of communication with the TCP/IP protocol, machines can now communicate over the Internet - giving rise to the IoT. Simply put, the IoT is nothing more than an electronic system that has the ability to exchange data with other electronic systems using TCP/IP. There are other ways of communicating today - such as radio or GSM technologies.

### **Basic concepts**

A smart object is a physical object in which a processor, a data storage system, a sensor system and network technology are embedded. Some smart objects can also affect the environment through actuators. In principle, all physical objects can be turned into smart objects, for example ordinary everyday objects such as pens, wristwatches (there are many models of wristwatches with sensors and processors, e.g. to measure heart rate or determine geographical location) or cars (more recently autonomous cars). In an industrial context, it can be a machine or a product to be handled. Smart objects can also be anywhere. In fact, there are almost no restrictions in terms of domains: consumer electronics, household appliances, medical devices, cameras and all sorts of sensors and



data-generating devices [6]. Most smart objects have a user interface and interaction capabilities to communicate with the environment or other devices (e.g. displays). The ability of smart objects to communicate with other objects and their environment is a central component of the Internet. In summary, the idea is that specific information can be retrieved via any networked smart object, which is identified and located, and can have its own, "home page" i.e. a unique address.

Today we can take advantage of a wide range of cheap, tiny and relatively powerful components, including sensors, actuators and single board computers (SBCs), to enrich physical objects and connect them to the Internet. SBCs such as Raspberry Pi, BeagleBone Black and Intel Edison Open, as well as open source electronics such as Arduino - which entered the market between 2005 and 2008 - have catalysed millions of new ideas and projects. Creating and collecting data about the state of physical objects can form the basis of exciting home and office automation, education and leisure activities, with real-time visualisation of information generated by data 'on the move'. Moreover, remote networks of smart devices, deployed elsewhere, at another location, can be used. Closely related to 'smart objects' is the concept of 'smart environments'. One definition emphasises the extent to which smart objects are deployed and interact. A compilation of smart objects in a given space, such as an enclosed space (car, house, room) or an outdoor space - such as a district or an entire city (a smart city) transforms an ordinary environment into a smart environment. Another definition says that sensors are the key factor of a smart environment [7]. Essential to a smart environment is the contextual information gathered by sensors to provide tailored applications and services. We can define a smart environment as the physical world - which is richly and invisibly interwoven with sensors, actuators, displays and computing elements - the environment being seamlessly integrated into the everyday objects of our daily lives, connected by a continuous network.

### **The need for qualified staff**

The tremendous growth of IoT will need a skilled workforce. Positions for IoT engineers or connected object engineers are already starting to emerge. These IoT engineers are very good technicians who master both the hardware and the application side of embedded systems. Embedded systems and information systems engineers will be the orchestra leaders of this digital revolution. Indeed, these experts will be responsible for designing and programming sophisticated electronic systems that allow our objects to communicate. On the software side, computer engineers specializing in information systems will design the infrastructures needed to collect, process, store and analyze data. When you say data, you also say information systems and security issues. This will involve the expertise of engineers specializing in data security and protection.

### **Some areas of IoT applications**

For continuous visual tracking of passengers travelling in a vehicle, the transmission of visual light transmission (VLT) and visual light transmission (VRT visual light reflectance) of the glass windows used in the vehicle should be at a certain value.

All vehicle manufacturers comply with certain standards; however, the vehicle owner/user generally buys tinted films on the gray market - and sticks them on the glass windows - which obstructs visibility and does not allow law enforcement authorities to have a clear view of who is riding in the vehicle.



The *Social Internet of things* (SIoT) is an emerging topic of the digital age with social, economic and technical significance. IoT has already proven its dominance in a wide range of sectors such as consumer products, durable goods, transport, industrial and utility components, sensors [8]. Now it is extending to social environments. The evolution of the powerful navigational capabilities of social networks is transforming social life into a new era of link prediction, community grouping, recommended systems, sentiment analysis and more. *Biometrics studies*. It has been established that a typical common pattern is a behavioral biometric trait in biometric science related to user identification/authentication system issues. However, the model being cost-effective and non-intrusive, its dynamics are a strong alternative to other biometric modalities. The model can be easily integrated into any existing knowledge-based user authentication system with minor alternations. The accuracy achieved in previous studies is impressive, but not acceptable in practice due to intra-class variation issues or data acquisition techniques.

Nanotechnology is playing an important role in changing the world by developing new technologies in areas such as healthcare, manufacturing, agriculture and industrial control systems [9]. The recent development of the *internet of nano-objects* (IoNT) is contributing to the production of new nano devices. Most of the devices we use today are equipped with sensors that have the ability to communicate and acquire intelligence. *Ambient assisted living* (AAL) has attracted the attention of dependent elderly people who are in care. AAL systems are IoT systems designed exclusively to assist older people in their daily activities. Developing a software model in AAL will enhance the functionality of the system, which is essential in managing emergency situations faced by older people.

How do IoT objects communicate? IoT is a system of interconnected computing devices, mechanical and digital machines and appliances, objects, animals or people that have unique identifiers and the ability to transfer data over a network without the need for human-computer interaction. We will need to know how devices or objects in the IoT communicate and how the meaningful names will translate the name service in the machine into an understandable form. To do this we will need to know how naming services are changed in the IoT, how their *naming, addressing, and profile server* (NAPS) overcomes these challenges [10].

*Medical applications*. In general, an IoT application focuses on timely service and improves efficiency. For this reason, many IoT-based healthcare devices have been developed to provide appropriate treatment to patients in a timely manner. In healthcare, such devices have adopted the principle of easy communication protocols between different IoT-based healthcare services. Recent technologies have been introduced to mitigate security issues in IoT healthcare - by adopting different security protocols and standards and focusing on detailed studies of security issues in communication between devices - through step-by-step implementation of Contiki network simulator.

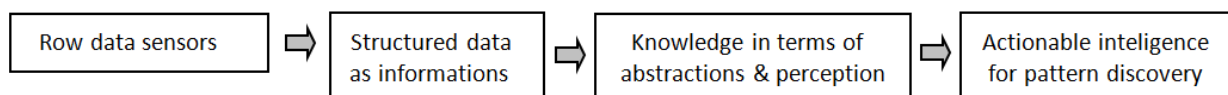
Security issues in many IoT deployments, while presenting in the information technology domain, offer a lot of unique challenges. It is a fundamental priority to address these challenges to prove that IoT products and services are secure. IoT devices are vulnerable to attack because the systems have a very low-level of protection and security. That is why innovative frameworks propose the development of a secure system along with authentication. The collaborative, learning approach has proven to be an ideal model to recognize the intruder pattern, and the system can provide a solution based on this model.

*Epidemiological triad.* Diseases occur due to the interaction of the agent, the host and the environment, the so-called 'epidemiological triad'. There are many reasons for the failure to prevent disease complications. Due to lack of experience and time, doctors only address the bio-medical side of the disease and ignore the other important aspects. The science of disease and the art of healing by physicians must be incorporated into computational carrier services. Electronic maintenance of health records is done by connecting IoT devices to the system so that the doctor can view the data on the table. IoT is a boon to the medical field because it saves doctors time handling other calls. Wearable devices, such as those that record children's fevers, reduce the risk of illness by regularly monitoring sensor data. Using IoT puts health in the hands of patients.

*Inter-operable.* Billions of devices will be connected to the Internet in the near future. This will ensure inter-operable between IoT elements - one of the most important requirements to support the targeting, tracking and discovery of objects as well as the representation, storage and exchange of information. The definition of ontology and the use of semantic descriptions for data will make them inter-operable for users and stakeholders sharing and using the same ontology [11].

*Autism spectrum disorders (ASDs)* refer to concepts of instability that disrupt social communication, interaction and normal behavior in general. In some ways, every autistic child is unique. He or she faces serious problems with emotional balance, community interactions and communication skills; a high degree of personalizing is needed to communicate with the outside world. So far, medical science has not been able to determine the exact reason for autism; but most therapists have shown that it is the unpredictable behavior of neurons in the human brain. The prospect of the availability of IoT support for the use of services to improve the lives of children with autism and their families in society is looming; it will help teach and train autistic children basic skills and concepts in their everyday requirements.

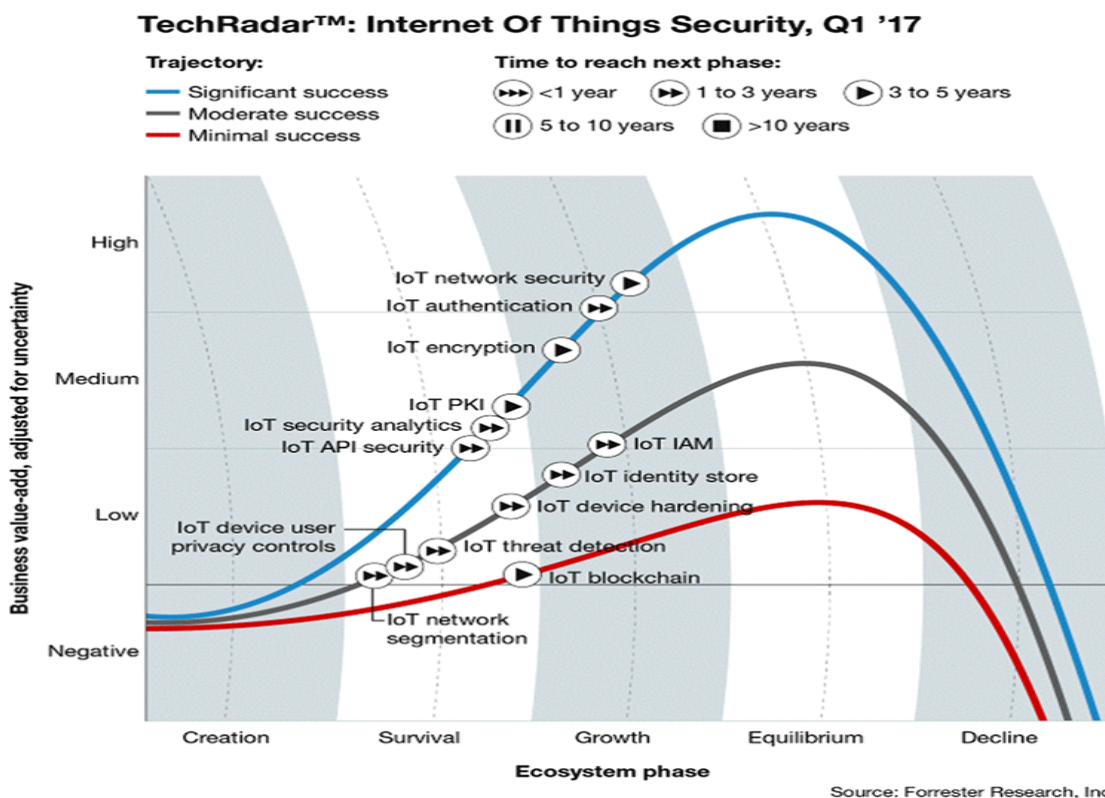
*Scalability.* Because IoT generates an enormous amount of data, dealing with the volume, variety, velocity, and veracity of the data is a challenge for real-time operation and efficient data management using highly intensive, accurate analytic (Figure 4).



**Figure 4.** Knowledge hierarchy in the IoT context.

Most IoT cases use require real-time data transmission. For some of them, data transmission is even critical (health sensors, for example, or vehicle applications). Then, network operations for IoT must be secured so that data can be transmitted in real-time from the device to the destination (which could be a server, gateway or other device). The network infrastructure should ensure low delay (which could be an issue for some congested networks, such as 3G networks). Important networking challenges: network design and architecture, and dealing with appropriate protocols.

Similarly, reliability of data transfer is also of great importance for some Internet use cases. It is imperative to have a reliable network, both in terms of data transfer and in terms of security (Figure 5). Indeed, data must not be able to be intercepted and altered by malicious equipment or users. Security is also an essential requirement, along with network support, to provide a reliable IoT system [9].



**Figure 5.** For 13 important security technologies of IoT, *Forrester Research* presents their prospects for future (Copyright © 2017, Forrester Research Inc.)  
 Quality of service.

The IoT therefore enables the connection of consumer electronic devices or household appliances, such as medical devices, refrigerators, cameras and sensors, which are part of the Internet environment. This opens the door to new innovations (that will create a type of interaction between objects and people and enable smart cities, infrastructures and services to improve quality of life and use of resources).

**Coexistence issues**

As IoT devices use different protocols on crowded bands, a major problem that arises is communication failure attributed to coexistence. Coexistence can be defined as the ability of wireless equipment to function when there are other devices using different protocols. Coexistence concerns are driven by three key factors: (1) Increased use of wireless technology for critical equipment connectivity. (2) Heavy use of unlimited or shared spectrum. (3) There are higher deployment rates of sensitive equipment such as intravenous infusion pumps, pacemakers and defibrillators. They directly influence the reliability of medical device communications.

Three techniques are commonly used to improve device and network coexistence. One technique is physical separation. Placing two networks in different locations, by each network encounters a weaker signal from the other. However, physical separation is not always practical, as is the case in healthcare environments using the 2.4 GHz industrial-medical-scientific (ISM) band. In this scenario, a large amount of IoT wireless devices across the facility can operate in this band. The second technique involves frequency separation. Essentially, interference between two networks is reduced when one network operates on a different frequency than the other - whether they are located close to each other or not.

However, frequency separation is not always effective in the 2.4 GHz band, as all *Bluetooth*, *Zigbee* and *IEEE 802.11 bands* use this band.

The third technique is time separation: information is sent and received at different times to avoid collisions.

### **What progress can be expected? (Trends)**

- Voice User Interface (VUI) will be a reality;
- Real expansion of small IoT;
- Growth in data and devices with more human-device action;
- More movement to the Edge;
- More social, legal and ethical issues;
- More investments in IoT;
- IoT focus on security using Blockchain;
- The rise of industrial IoT and digital twin technology;
- Artificial Intelligence – big player in IoT;
- Standardization – still a problem.

### **Conclusion**

The concept of combining computers, sensors and networks to monitor control devices has been around for decades, but the recent confluence of key technologies and market trends has been the catalyst for the IoT idea.

IoT promises to form the foundation of new products, processes and business models, with the potential to seriously affect both B2C (*Business to Consumer*) and B2B (*Business to Business*) markets, as well as the way we produce goods with spin-off products, including the Industrial Internet of Things and Industry 4.0.

While the ramifications are - most likely - significant, a number of potential challenges may hinder the vision, particularly in the areas of security, privacy, interoperability, standards, as well as legal, regulatory and legal issues - such as the inclusion of emerging economies. IoT encompasses not only technological considerations, but also social and political issues. IoT is fast becoming more and more a reality and there is vast scope for new designs and achievements by creators and developers.

### **References**

1. IERC-European Research Cluster on the Internet of Things, 2013, <http://www.internet-of-things-research.eu/>
2. Jamil Y. Khan and Mehmet R. Yuce. *Internet of Things (IoT). Systems and Applications* (2019). Jenny Stanford Publishing, pp. 366.
3. Mayer S., Guinard D., Trifa V. Facilitating the integration and interaction for real-world services for the web of things. In *Urban Internet of Things: Towards Programmable Real-Time Cities (UrbanIoT 2010)*; Workshop at the internet of Things 2010 Conference.
4. Mayer S., Guinard D., Trifa V. *SmartThings – Make your world smarter*, 2013, <http://smarththings.com>
5. Sensinode Ltd., 2013, <http://www.sensinode.com/>
6. Corredor I., Bernardos A., Iglesias J., Casar J. R.: Model-driven methodology for rapid deployment of smart spaces based on resource-oriented architectures. *Sensors* **12**(7), 9286-935, 2012
7. Tripathy B. K., Anuradha, J. (eds.): *Internet of Things (IoT) – Technologies, Applications, Challenges and Solutions*, CRC Press, Boca Raton, London, New York, 2018
8. Serpanos D., Wolf M.: *Internet-of-Things (IoT) Systems – Architectures, Algorithms, Methodologies*. Springer, 2018
9. Qusay F. Hassan (ed.): *Internet of Things A to Z, Technologies and Applications*, IEEE Press & Wiley, 2018
10. Băjenescu Titu-Marius I. From the Internet of things (IoT) to smart cities (Sc). *Journal of Engineering Sciences*, 2018, no.3. <https://www.doi.org/10.5281/zenodo.2557328>.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).12](https://doi.org/10.52326/jss.utm.2021.4(2).12)  
UDC 663.2



## CAPITALIZATION OF SECONDARY WINE PRODUCTS - AN OPPORTUNITY FOR THE WINE SECTOR OF REPUBLIC OF MOLDOVA AND ROMANIA

Grigore Musteață<sup>1</sup>, Anatol Balanuță<sup>1</sup>, ORCID ID: 0000-0002-4153-1065,  
Vladislav Reșitca<sup>1\*</sup>, ORCID ID: 0000-0002-6063-1731,  
Razvan Vasile Filimon<sup>2</sup>, Marius Mihai Băetu<sup>2</sup>, ORCID ID: 0000-0001-5343-5401,  
Antoanela Patraș<sup>2</sup>, ORCID ID: 0000-0002-4054-4884

<sup>1</sup>Technical University of Moldova, str. Studenților, 9/9, Chisinau, Republic of Moldova,

<sup>2</sup>"Ion Ionescu de la Brad" University of Agricultural Sciences and Veterinary Medicine of Iași, Romania

\*Corresponding author: Vladislav Reșitca, [vladislav.resitca@ftmia.utm.md](mailto:vladislav.resitca@ftmia.utm.md)

Received: 02.25.2021

Accepted: 03.28.2021

**Abstract.** One of the economy key sectors of Republic of Moldova and Romania is the wine sector, where a progressive trend has prevailed in recent years. But to increase its efficiency it is necessary to use the raw material in a complex way, producing both famous wines and other necessary products, as well as to comply with the rigors of ecological standards. The issue of wine by-products draws the attention and interest of researchers, regulators, industry and consumers and has urged the European Community to a zero waste economy by 2025. The article deals with the chemical composition of the main parts of grapes which depend on a number of factors, such as variety, climatic conditions of the year, vine and wine making practices, condition of the grapes, their maturity, etc. There have been presented physico-chemical characteristics of the wastes obtained from the grapes processing such as: bunches, grape pomaces, piquette and diffusion juice, seeds, wine yeast, tirighia and vinasse. Thus, by making use of wine wastes, a number of valuable products can be obtained that can be used for different purposes.

**Keywords:** *Wine industry, grapes, grape pomaces, wine yeasts, grape seeds, vinasse.*

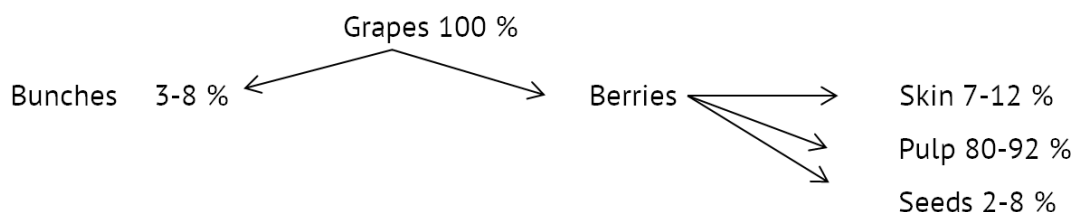
**Rezumat.** Unul dintre sectoarele cheie ale economiei Republicii Moldova și României este ramura vitivinicolă, unde o tendință progresivă a predominat în ultimii ani. Însă pentru sporirea eficienței sale este necesar de a folosi materia primă într-un mod complex, obținând de rând cu faimoasele vinuri și alte produse necesare, precum și a se conforma rigorilor standardelor ecologice. Problema produselor vinicole secundare atrage atenția și interesul cercetătorilor, organismelor de reglementare, a industriei și consumatorilor și a îndemnat Comunitatea Europeană spre o economie zero deșeuri către anul 2025. În articolul dat este prezentată compoziția chimică a principalelor părți ale strugurilor care depind de un șir de factori, cum ar fi soiul, condițiile climaterice ale anului, practicile viticole și cele oenologice, starea de sănătate a strugurilor, gradul de maturitate a lor, etc. De asemenea, sunt prezentate caracteristicile fizico-chimice ale deșeurilor obținute la

prelucrarea strugurilor cum ar fi: ciorchinii, tescovinele, pichetul și zeama de difuzie, semințele, drojdia de vin, tirighia și vinasa. Astfel, valorificând deșeurile de vin, se poate obține o serie de produse valoroase care pot fi utilizate în diferite scopuri.

**Cuvinte cheie:** *Industria vinicola, struguri, tescovina, drojzii de vin, semințe de struguri, vinasa.*

## 1. Introduction

The wine sector of Republic of Moldova and Romania has experienced a special development in the last 30 years, becoming one of the important sectors of the economy. But to increase its efficiency it is necessary to use the raw material in a complex way, obtaining along with the famous wines and other necessary products, as well as to comply with the rigors of ecological standards in order to prevent environmental pollution. The problem of agri-food industrial by-products and waste generation has attracted the interest of researchers, regulatory bodies, industry and consumers and urged the EU towards a zero-waste economy by 2025 [1]. Residues and side-off products, as pomace, seeds, stems, yeast and bacteria lees, organic acids (tartrate), CO<sub>2</sub>, water and other by-products of grape processing are currently an environmental problem, their recovery and reintroduction into the food technology circuit is one of the main objectives of sustainable horticulture. Unfortunately, only a few quantities of these materials are used for fertilization (exclusively in vineyards), animal feed, biomass for energetic purposes or generation of other products [2]. Although potential utility of this waste for value-added products is promising most of the wine side-off products are still underexploited [3]. Moreover, the food industry is facing the challenge of developing new foods with increased health benefits and meeting consumer's appreciation, some by-products of the wine sector showing high potential to be used in this purpose [4]. These imperatives are particularly important at the moment and emerge from the morphological composition of the grapes. It is as follows:



Globally, grapes are mostly used in two directions: fresh and dehydrated (raisins) - especially in Turkey, Iran, Iraq, the Middle East, the USA, some African countries; and the second direction for industrial processing in order to obtain wine products, as natural wine or special wines (sparkling, aromatized, liqueur, etc.). The latter are obtained only from the liquid component of grapes, must, which is contained in the pulp and mesocarp. The other components result during the processing of the grapes as waste or by-products. They contain a number of valuable substances, which can be extracted by certain technologies, helping to streamline the industry.

## 2. Classification of wine waste

The amount of waste can reach up to 20% of the mass of processed grapes in some years. In Republic of Moldova and Romania, according to the Law on Vine and Wine, wine by-products present the waste from the processing of grapes and the manufacture of wine products [5]. These are attributed to:

1. Must bunches;

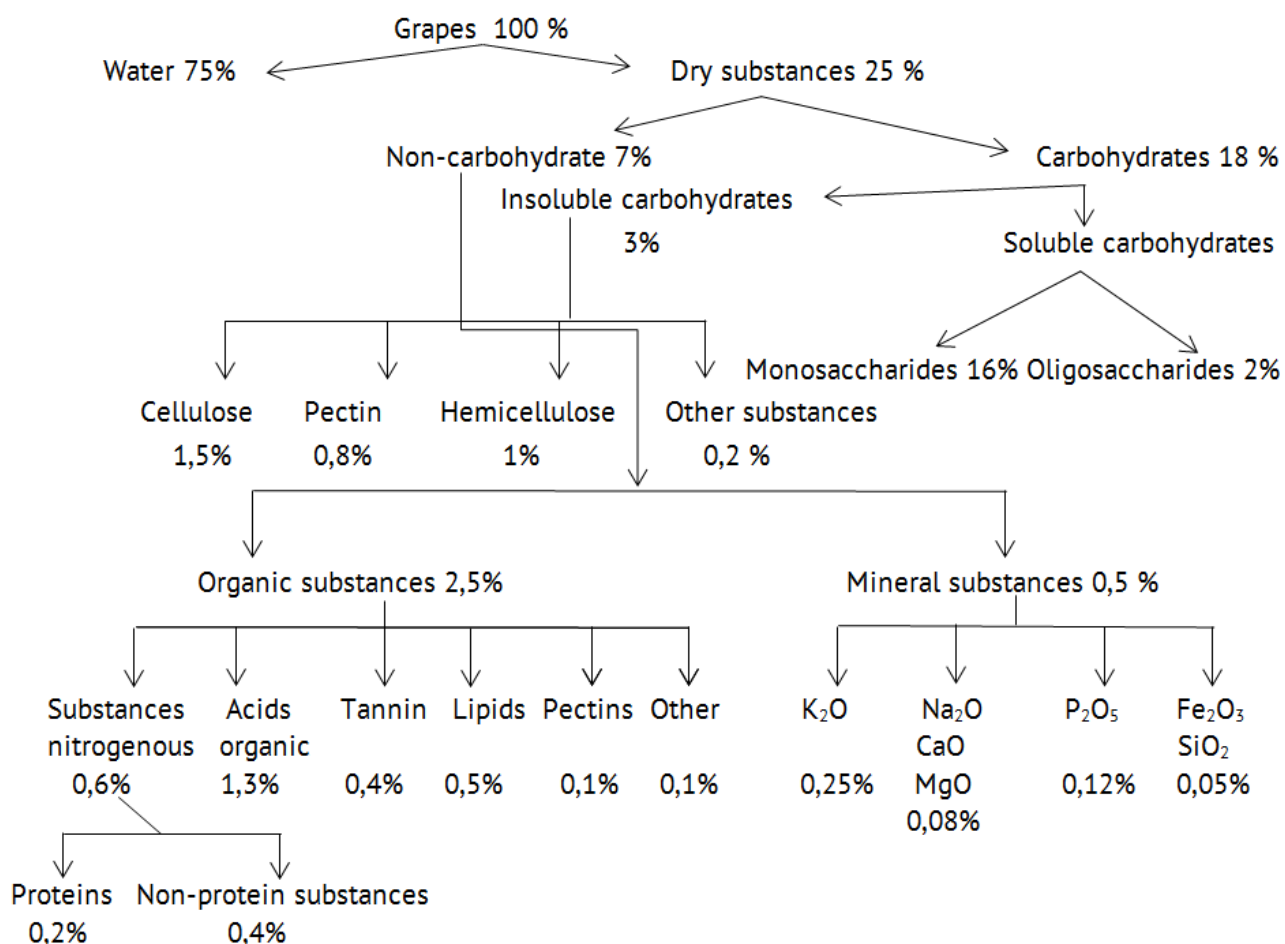
2. Grape pomaces (sweet, fermented, alcoholic);
3. Piquette;
4. Diffusion juice;
5. Wine yeast;
6. Tirighia (wine stone);
7. Vinasse;
8. Marc.

In accordance with Republic of Moldova Government Decision no. 356 of 11.05.09 for the approval of the Technical Regulation "The system of organization of the wine market and the traceability of products" the by-products obtained from waste are:

1. Alcohol from grape pomace;
2. Alcohol from wine yeast;
3. Tartaric products;
4. Enocolorant;
5. Grape seed oil;
6. Enotanins;
7. Feed;
8. Composts.

Here can be added biological gas, CO<sub>2</sub>, vinegar.

The quantity and quality of wine by-products depend on the chemical composition of the grapes, which can be schematically shown in the following figure:



**Figure 1.** Schematic diagram of the chemical composition of grapes [6].

The chemical composition of the main parts of the grapes depends on a number of factors, such as the variety, the climatic conditions of the year, the viticultural and oenological practices, the health of the grapes, their degree of maturation etc [7].

Table 1 shows the chemical composition of the main parts of the grapes, the values being expressed in % by weight of the fresh grapes.

Table 1

**Chemical composition of the main parts of grapes [8]**

N/r	The composition	The component parts of grapes			
		Rachis	Skin	Seeds	Pulp
1	Water	78-80	75-80	25-45	80-85
2	Carbohydrates:				
	• Glucose	-	-	-	7,0-12,5
	• Fructose	-	-	-	8,0-13,0
	• Sucrose	-	-	-	0,1-0,15
	• Pentozan	0,5-1,5	0,5-1,0	4,0-5,0	-
3	Organic acids:	-			
	• Tartaric acid	0,5-1,5	0,2-0,5	-	0,3-0,8
	• Malic acid	0,1-0,5	0,01-0,02	-	0,05-0,4
	• Citric acid	-	-	-	0,02-0,09
	• Gluconic acid	-	-	-	0,01-0,02
4	Polyphenols:				
	• Tannins	3-5	0,5-1,0	5,0-8,0	0,01-0,02
	• Anthocyanins	-	0,2	-	Tinctorial varieties
5	Nitrogenous substances:				
	• Amino acids	-	0,02-0,10	•	0,5-1,0
	• Peptides, polypeptides	1,0-1,2	0,20-0,30	0,5-2,0	0,01-0,20
	• Proteins	0,5-0,8	0,05-0,10	0,2-0,5	0,01-0,10
	• Biogenic amines	-	-	-	0,02
6	Lipids:				
	• Fatty acids	0,01-0,02	0,08-0,20	9,0-18,0	0,01-0,05
	• Phytosterols	-	0,01-0,04	-	-
7	Pectic matter:				
	• Protopectin	-	0,01-0,05	-	-
	• Pectin	-	-	-	0,5-0,2
	• Gums	-	0,02-0,10	-	0,01-0,50
8	Primary flavors:				
	• Terpenes	-	0,01-0,10	Traces	-
	• Terpene glycosides	-	0,10-0,50	Traces	-
9	Mineral substances	2,0-3,0	0,5-1,0	2,0-4,0	0,2-0,3
10	Polysaccharide				
	• Cellulose	5,0-10,0	3,0-4,0	0,1-0,2	2,0-4,0
11	Vitamins (group B, PP, C)	-	-	-	0,01-0,08
12	Enzymes	-	Pectolase	-	Oxidoreductases



As can be seen from the table, the chemical composition is very varied, the substances being unevenly distributed in all the component parts of the grapes.

### Waste characteristics

The rachis represent 3 - 8% from the weight of the grapes and form their skeleton. The weight of the bunches depends on the variety, the degree of ripeness of the grapes, their state of health and the local ecopedoclimatic conditions. Most wine grape varieties have lignified bunches, they become stiff and crush easily during transport. If the peduncle is woody, it becomes short and thick and makes it difficult to harvest the grapes, especially in the case of mechanized, increasing losses. If the peduncle remains semi-lignified or even herbaceous, the grapes are easily harvested, but when they are pressed, must from bunches are obtained, which by its chemical composition reduces the quality of the must for wine: reduces its osmotic pressure and can give the wine the scent of bunches.

Analyzing the chemical composition of the bunches (from table 1), we can conclude that their capitalization is not convenient. As a rule, the bunches are not used unless they are used as compost.

Pomaces are dense residues obtained after separating the grape must (sweet pomace) or separating the wine (fermented pomace). Pomaces consist of skin, seeds, pulp, must or wine residues and possibly stalks [9]. Alcoholic pomace is also very rare, in the case of the production of red (Pastoral type) or white dessert wines (liqueur wines of Muscat varieties, in particular), because the technology of their production involves the alcoholization of the must. The most abundant in grape pomace are dietary fibers that are present in high levels (up to 85% depending upon the grape variety) and polyphenolic compounds that mainly (about 70%) remain in pomace after the winemaking process [10]. Phenolic substances are concentrated in the grape skin and seeds, precisely that part which remains as pomace after grape processing [11]. The polyphenol content and composition of grape pomace vary with grape variety, climate condition, soil type, maturity and length of maceration [12].

According to their composition, pomaces differ greatly depending on the vinification method ("white", "red" or special wines method), as well as the techniques used in vinification. A common index of pomace regardless of the method of vinification is their humidity, which makes up 50 - 55% (in pneumatic presses). The composition of the pomace in terms of the vinification method is shown in table 2.

Table 2

### Composition of pomaces depending on the method of grape processing [6]

N/r	Substance	Method of wine making and obtaining pomace		
		" in white"	,"in red"	alcoholic
1	Carbohydrates (mono-, oligo-)	5-10	-	4-6
2	Ethyl alcohol	-	4-5	4-8
3	Tartrates (in tartaric acid)	0,5-2,0	0,7-2,5	1,2-3,0
4	Seeds		15-35	
	Oil,% by mass		10-18	

The content of the substances that can be capitalized from pomaces is quite varied and indicatively oscillates as can be seen from the data in the table. Thus, it results that, in consequence of the capitalization of pomace by industrial means, can be obtained such products as ethyl alcohol, tartaric materials, grape oil, fodder, composts and biogas.

The degree of extraction of pomaces varies between 70 and 80% (except for the extraction method by ion exchange), which leads to dilute solutions, which require increased energy consumption and reduce the economic efficiency of the processes [13]. In order to fit in rational terms, large quantities of raw materials are needed (special enterprises such as Ravenna, Italy or Focșani, Romania). Also, naturally dried pomace do not require expensive storage conditions, maintaining its biologically active properties [14].

**Piquette and diffusion juice.** The difference between these two wine wastes consists in the diffusion method. The piquette is obtained by static diffusion of the pomace in certain solvents. The diffusion juice is obtained as a result of the extraction of the soluble components of the pomace at special installations in dynamic regime (extractors), usually in several steps (3 - 6).

The basis for obtaining this waste is the diffusion process, which is expressed by the Fick-Einstein law:

$$dC = \frac{RT}{N} * \frac{1}{6\pi\eta r} * S \frac{dC}{dX} * d\tau$$

Where:

$dC$  - amount of substance that diffuses in a unit of time, g;

$D$  - diffusion coefficient

$$D = \frac{RT1}{N6\eta\eta r}$$

$S$  - the surface through which it diffuses the compounds (sugars, tartrates),  $\text{cm}^2$ ;  $dC / dX$  - the concentration gradient,  $\text{g} / \text{cm}^3$ , which constitutes the decrease of the concentration;

$d\tau$  - unit of time, sec, min;  $R$  - gases constancy;  $T$  - temperature, K;  $N$  - Avogadro number;  $\pi$  - pi number;  $\eta$  - environmental viscosity,  $\text{Pa} \cdot \text{sec}$ ;  $r$  - radius of the particles from which the diffusion takes place, cm.

This law reflects quite completely the direction of sugars extraction and tartaric compounds from pomaces. The dominant factor that will ensure the diffusion process is the diffusion coefficient, which largely depends on the temperature.

The diffusion juice is obtained by washing the pomace in multi-stage extractors. The degree of extraction of substances (sugars and tartrates) is illustrated in Table 4.

Table 3

**Quantity of substance extracted when using the extractor with the countercurrent principle in 6 steps (%) compared to the initial content [15]**

$a$	Number of washes						Number of extraction volumes
	1	2	3	4	5	6	
1	50,00	66,67	75,00	80,00	83,55	85,71	1
2	66,67	85,71	93,93	96,77	98,42	99,21	2
3	75,00	92,31	97,50	99,17	99,73	99,91	3

$a$  - the ratio of the liquid drained from the pomace to the soaked liquid.

The amount of substance extracted will be equal to:

$$[1 - 1/(1 + a)^n] * 100\%$$

The seeds are part of the pomace, but according to their value as by-products it is worth highlighting separately. The seeds make up 3-8% of the berry weight, depending on the variety and climatic conditions of the year. The berries contain 1 - 4 seeds, generally 2 -3 (Keller, 2010).

The seeds are made up of two integuments, one external and one internal. The external one, as a rule, is lignified. It was found that there is a certain correlation between the number of seeds, weight and grain size, sugar content and acidity. Grains that have more seeds are larger, accumulate less sugar and more acids. The chemical composition of the seeds is shown in Table 1. From the table we notice that the components that can be extracted are lipids and tannins, constituting respectively 9 - 18 and 5 - 8%.

The use of special separators allows the separation of the seeds, the yield of the process being depending on the humidity of the pomace and the content of the seeds in the initial pomace. Table 4 presents the results of research conducted within the scientific-practical institute of horticulture and food technologies [15].

Table 4

**Yield of seeds obtained from wet grape pomace**

Nr sample	Moisture of the pomace,%	Seeds content of initial pomace,%	Seeds moisture, %	Separation efficiency,%
1	62,3	28,7	42,3	67,6
2	58,7	32,3	40,2	74,6
3	55,4	32,4	39,8	70,9
4	60,5	35,2	37,6	66,4
5	56,8	38,8	41,3	78,3
6	54,3	41,3	43,5	91,3
7	53,6	45,6	45,2	89,5
8	57,4	44,3	44,7	89,8

We can conclude that the separation yield is higher if the humidity of the pomace is lower and the seed content in the pomace - higher.

Grape seed oil is rich in phenolic compounds, fatty acids, and vitamins, with economic importance to pharmaceutical, cosmetic, and food industry [16]. Grape seed contains 8%–20% of oil (dry basis) [17]. Considering that oil is the most valuable product obtained from grape seeds, in the same study was investigated the dependence of oil content in seeds, knowing that it depends on the variety, the degree of ripeness of the grapes and their place of origin. The results are presented in Table 5.

Table 5

**Oil content of grape seeds of different varieties and wineries [15]**

No. sample	The grape variety	Grape growing area	Mass concentration of sugars in grapes, g / dm <sup>3</sup>	Seed oil content,%
1	Aligote	Bardar	167	15,9
2	Feteasca	Bulboaca	163	15,3
3	Rcațiteli	Cimișlia	181	16,1
4	Sauvignon	Căușeni	173	15,0

Research on the fatty acid content of grapes has shown that in unrefined oil the main fatty acids are linoleic acid (74.06% of the amount of triglycerides), oleic (15.17%), palmitic (7.65%) and stearic (2.63%). The same 4 main acids in refined oil were 74.98; 15.96; 8.98 and 2.83%, respectively. So, after the fatty acid content, grape oil can be used as a cooking oil. This fact is also confirmed by the values of iodine, saponification and acid indices. In fact, in the south of France, where large areas are occupied by vines and large quantities of red grapes are vinified, grape seed oil is widely used in food, most often fresh for salads.

**Wine yeast** is the sediment obtained after the fermentation of the must and the separation of the solids. Wine lees are defined (EEC No. 337/79) as the residue that forms at the bottom of recipients containing wine, after fermentation, during storage or after authorized treatments, as well as the residue obtained following the filtration or centrifugation of this product [18]. Wine lees represent 2–6% of the total volume of wine produced and in addition to the yeast cells, the sediment contains salts of tartaric acid, polyglucides (pectins, gums, mucilages), phenolic compounds, proteins and interaction products, lipids, phosphates, sulfates [19].

According to the dry substance content, the yeast sediments are divided into 4 categories:

- Liquid yeasts, which contain up to 12% dry substance;
- Gravity sedimented yeasts with 12-30% dry substance;
- Pressed yeast, 30-60% dry substance;
- Dry yeast.

At the same time, according to the type of wine, wine yeasts are dry yeasts and alcoholic yeasts.

Table 6 shows the characteristics of liquid yeasts [13].

Table 6

The index	Characteristics of liquid yeasts	
	The norm for liquid yeasts	
	Dry wines	Alcoholic wines
Mass fraction of ethyl alcohol,%, min	6,0	10,0
Mass concentration of sugars, recalculated in invert sugar, g / 100 cm <sup>3</sup> , min.	-	7
Mass fraction of tartaric acid,%, min.	2,5	3,5
Mass fraction of suspended substances,%	30-50	30-50
Mass fraction of mineral substances insoluble in hydrochloric acid,%, max.	1,0	1,0
Mass fraction of iron, mg / dm <sup>3</sup> , max.	0,15	0,15

The table shows that in alcoholic yeasts the mass fraction of tartaric acid is higher than in dry yeasts, because they settle more easily under the action of ethyl alcohol. The content of different substances in 100 kg of pressed yeast is in medium (Table 7).

Table 7

Content of substances in 100 kg of pressed yeast [20]		
Name of the substances	Substances content	The average value used for the record
Dry substance, kg	40-70	50
Potential anhydrous alcohol, L	4-14	8
- In dry wine sediments	4-6	5
- In the sediments of alcoholic wines	6-14	10
Tartaric compounds, recalculated in tartaric acid, kg	1-6	3
Protein substances, kg	13-30	25

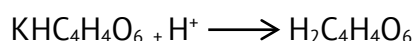
Dry yeasts must correspond to the following requirements: humidity - max. 3%; tartaric acid - at least 2.4%; insoluble impurities - up to 50%; the size of the pieces - 2 cm.

**Tirighia (wine stone)** is the sediment that is deposited on the walls and bottom of the containers used for fermenting the must, storing the wine and, in particular, for treating the wines with cold.

The wine stone has the following composition:

- potassium acid tartrate  $\text{KHC}_4\text{H}_4\text{O}_6$  - about 65%;
- calcium tartrate  $\text{CaC}_4\text{H}_4\text{O}_6$  - about 4%;
- impurities from must or wine.

Tirighia is an excellent raw material for obtaining tartaric acid, because it is only necessary to replace the potassium cation with hydrogen ions, which is very easily achieved by treatment with mineral acids, most commonly sulfuric acid:



The collection of the wine stone can be done mechanically and chemically. After mechanical collection, the yeasts are washed with cold water, dried at low temperatures and then packed.

Dilute 2% sulfuric acid solutions are used to collect the wine stone deposited on the walls of the containers.

**Vinasse** presents the liquid obtained as a result of the distillation of wines raw material for wine distillates. In principle, vinasse is the same as wine, but from which the volatile compounds were separated. Vinasses are acidic effluents with high organic content, including acids, carbohydrates, phenols and unsaturated compounds [21]. The chemical composition of vinasse is shown in Table 8.

Table 8

Chemical composition of vinasse [22]		
N/r	Indices	Content
1	Mass fraction of suspensions, g / cm <sup>3</sup>	0,049
2	pH	3,20
3	Volatile acidity, g / dm <sup>3</sup>	4,40
4	Total extract (without suspensions), g / dm <sup>3</sup>	11,40
5	Phenolic substances (total content), mg / dm <sup>3</sup>	235

Continuation Table 8

6	Total nitrogen, mg / dm <sup>3</sup>	272,50
7	Amino nitrogen, mg / dm <sup>3</sup>	58,70
8	Glycerol, g / dm <sup>3</sup>	3,21
9	Tartaric acid, g / dm <sup>3</sup>	2,90

The chemical composition of vinasse is close to the chemical composition of the wine from which it resulted. After purification it can be used in the manufacture of wine vinegar.

Of interest is the work of Mr. Odajiu Stefan, who proposed that vinasse be used as a nutrient medium for yeasts in the process of fermenting molasses to obtain ethyl alcohol, the process being the subject of a patent [23].

It was also established that, at the concentration of vinasse in vacuum, the concentrate obtained can contain up to 74.18 g/dm<sup>3</sup> total extract, and the content of phenolic substances reaching up to 1465 g / dm<sup>3</sup>.

These vinous concentrates have been proposed for use in the manufacture of special Madeira strong wines and Brandy "Botna" strong drinks in order to increase the extractability of these products.

Thus, from the above it is obvious that, by capitalizing on wine waste, a series of valuable products can be obtained that can be used for different purposes [24 - 26].

### Conclusions

Taking into account that currently only around 30 to 40% of wine by-products are used worldwide, mainly as feed or fertilisers, the recovery strategy needs to be rethought so that, properly managed, secondary wine products are reused and exploited to obtain value-added products. The analysis of the physico-chemical composition of different categories of wine waste shows that they have a wide range of extractable compounds, which are of interest to the food industry, pharmaceuticals, etc. The use of by-products derived from the wine industry would allow to reduce to a minimum the amount of residues and to obtain valuable extracts of bioactive compounds, with multiple fields of application.

**Acknowledgments:** The authors would like to thank the Project 2SOFT/1.2/83 "Intelligent valorisation of agro-food industrial wastes (INTELWASTES)", funded by the European Union, within the program *Cross border cooperation Romania - Republic of Moldova 2014-2020*.

### References

1. Naziri E., Nenadis N., Mantzouridou F.T., Tsimidou M.Z. *Valorization of the major agrifood industrial by-products and waste from Central Macedonia (Greece) for the recovery of compounds for food applications*. Food Research International, 65, part C, 2014, p. 350-358.
2. Maicas S., Mateo J.J. *Sustainability of Wine Production*. Sustainability, 12, 2020, p. 559. doi:10.3390/su12020559.
3. Pasqualone A., Bianco A.M., Paradiso V.M., Summo C., Gambacorta G., Caponio F. *Physico-chemical, sensory and volatile profiles of biscuits enriched with grape marc extract*. Food Res Intl, 65(Part C), 2014, p. 385– 393.
4. Lavelli V., Sri Harsha P.S., Torri L., Zeppa G. *Use of winemaking by-products as an ingredient for tomato puree: the effect of particle size on product quality*. Food Chem., 152, 2014, p. 162-168.
5. Odajiu Ș. *New elements in the technology of using cognac wine*. Annals of the XVIII Congress of the Romanian-American Academy of Sciences and Arts "Moldova: scientific and cultural openings to the West", Vol. 2, p. 268, Chisinau 1993.
6. Duca B., Odajiu Șt., Musteață Gr. Patent no.592 C2 R.Moldova, Int.Cl6: C 12 P7 / 08; C 12 G3 / 12. Process for the production of ethyl alcohol // - published 31.07.96 BOPI Nr.7 / 96.

7. Keller M. *The science of grapevines: anatomy and physiology*. Academic Press, Elsevier Inc., 2010
8. Kishkovsky Zn., Merzhanian A.A. *Wine technology*. M.: Light and food industry, 1984, 584 p.
9. Balbinoti T.C.V., Stafussa A.P., Haminiuk C.W.I., Maciel G.M., Sasaki G.L., Jorge L.M., Jorge R.M. *Addition of grape pomace in the hydration step of parboiling increases the antioxidant properties of rice*. *Int. J. Food Sci. Technol.*, 55, 2020, p. 2370 – 2380.
10. Antonic B., Janciková S., Dordevic D., Tremlová B. *Grape pomace valorization: A systematic review and meta-analysis*. *Foods*, 9, 1627; doi:10.3390/foods9111627, 2020
11. Filimon R.V., Filimon Roxana Rotaru Liliana, Niculaua M. *Anthocyanin content and composition of fresh and dry pomace from Vitis vinifera L. wine cultivars*. *Scientific Study & Research - Biology*, 25, 1, 2016, p. 12-17.
12. Yu J., Ahmedna M. *Functional components of grape pomace: their composition, biological properties and potential applications*. *International Journal of Food Science and Technology*, 48, 2013, p. 221–237.
13. Urătu D. *Development of technologies for complex processing of grape seeds. Self-report of the doctoral thesis in technique*. Chisinau, 2007.
14. Filimon R.V., Niculaua M., Mihalache Arion Cristina, Anghel Roxana. *Assessment of bioactive polyphenolic compounds from oenological exhausted material*. *Analele Științifice ale Universității "Alexandru Ioan Cuza" Iași, Secțiunea a II-a, Vol. XI, Fascicolul 2, Genetică și Biologie Moleculară*, 2010, p. 171 - 176.
15. Târdea C. *Vinification treaty [Tratat de vinificație]*. Ed. Ion Ionescu de la Brad, Iași, 2001, 728 p.
16. Garavaglia J., Markoski M.M., Oliveira A., Marcadenti A. *Grape seed oil compounds: biological and chemical actions for health*. *Nutrition and Metabolic Insights*: 9, 2016, p. 59 – 64.
17. Rombaut N., Savoie R., Thomasset B., Castello J., Van Hecke E., Lanoiselled J.-L. *Optimization of oil yield and oil total phenolic content during grapeseed cold screw pressing*. *Ind Crops Prod.*, 63, 2015, p. 26 – 33.
18. Perez-Serradilla J.A., Luque De Castro M.D. *Microwave-assisted extraction of phe-nolic compounds from wine lees and spray-drying of the extract*. *Food Chemistry*, 124, 1652–1659, 2011.
19. Dimou C., Kopsahelis N., Papadaki A., Papanikolaou S., Kookos I.K., Mandala I., Koutinas A.A. *Wine lees valorization: Biorefinery development including production of a generic fermentation feedstock employed for poly(3-hydroxybutyrate) synthesis*. *Food Res. Int.*, 73, 2015, p. 81 – 87.
20. Razuvaev N. I. *Complex processing of secondary wine products*. Moscow, Food Industry, 1975, 168 p.
21. Salgado J. M., Rodriguez N., Max B., Perez B., Rodriguez R., Cortes S., Dominguez J. M., *Evaluation of wine vinasses as alternative nutrients in biotechnological processes*. *CyTA–Journal of Food*, 9, 2011, p. 278 – 281.
22. Duca Gh. *Secondary wine products*. Ed. Știința, 2011, p.112-143.
23. *The Law of Vine and Wine*. Chisinau, 2007, 16 p.
24. Elena Cristea, Rodica Sturza, Paula Jauregi, Marius Niculaua, Aliona Ghendov-Moșanu, Antoanela Patras. *Influence of pH and ionic strength on the color parameters and antioxidant properties of an ethanolic red grape marc extract*. *Journal of Food Biochemistry*, 2019. <https://doi.org/10.1111/jfbc.12788>.
25. Spinei A., Sturza R., Moșanu A., Zagnat M., Bordeniuc Gh. *The use of anthocyanin extract obtained from wine products in the prevention of experimental dental caries*. *Romanian Journal of Dentistry*, Vol. XX, nr. 3, 2017, p. 161-175.
26. Ghendov-Mosanu A., Sturza R., Chirița E., Patraș A. *Valorization of winemaking by-products in the production of jelly candies*. *Italian Food Materials and Machinery, Food Research*, September, 2016, p.12-15. ISSN 2239-6047.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).13](https://doi.org/10.52326/jss.utm.2021.4(2).13)  
UDC 663.2+339.138(478)



## ASPECTS OF VINEGARS PRODUCTION AND MARKETING IN MOLDOVA

Alina Boistean, ORCID ID: 0000-0002-5374-5853

Technical University of Moldova, 168 Stefan cel Mare Bd., Chisinau, Republic of Moldova

\*Corresponding author: Alina Boistean, [alina.boistean@toap.utm.md](mailto:alina.boistean@toap.utm.md)

Received: 03. 23. 2021

Accepted: 04. 26. 2021

**Abstract.** Vinegar is one of the oldest fermented products in the world and its production dates back to around 2000 BC. It is a liquid fermentation product that consists from 4% to 9% acetic acid, which is commonly used and consumed globally, either directly or as a condiment in food. It is produced by two-stage fermentation systems, i.e., the alcoholic fermentation of sugary substrates and subsequently, the acetous fermentation (oxidation) of the ethanol into acetic acid. There are numerous different types of vinegars produced worldwide based on the raw material and the production method used. Among all the vinegars available, the most common types of vinegar, produced in different parts of the world, and including some top-quality famous products, are “cider vinegar,” “balsamic vinegar,” “wine vinegar,” “rice vinegar,” and “malt vinegar.” Tropical fruit vinegars and vinegars made from any kind of agricultural surpluses are also available. The different raw materials and the methods used for the production of the different types of vinegars lead to a variety of products with distinctive characteristics. In this paper, definitions, local market and legislation and current trends in vinegar production are briefly highlighted and discussed.

**Keywords:** *vinegar, acetification, condiment, acetic acid, manufacturers.*

**Rezumat.** Oțetul este un produs de fermentație lichidă care conține de la 4% la 9% acid acetic, care este utilizat în mod obișnuit și consumat la nivel global, fie direct, fie ca ingredient în alimente. Este produs prin fermentarea în două etape, adică prin fermentarea alcoolică a substraturilor zaharoase și ulterior prin fermentarea acetică (oxidarea) etanolului în acid acetic. Există numeroase tipuri de diferite oțete produse la nivel mondial pe baza materiei prime și a metodei de producție utilizate. Dintre toate oțeturile disponibile, cele mai frecvente tipuri de oțet, produse în diferite părți ale lumii și care includ unele produse renumite de înaltă calitate, sunt „oțet de cidru”, „oțet balsamic”, „oțet de vin”, „oțet de orez”, și „oțet de malț”. Sunt disponibile, de asemenea, oțete de fructe tropicale și oțete obținute din orice fel de excedente agricole. Diferite materii prime și metodele utilizate pentru producerea diferitelor tipuri de oțeturi duc la o varietate de produse cu caracteristici deosebite. În această lucrare, sunt evidențiate și discutate pe scurt definițiile, piața locală și legislația și tendințele actuale în producția de oțet.

**Cuvinte-cheie:** *oțet, acetificare, condiment, acid acetic, producători.*



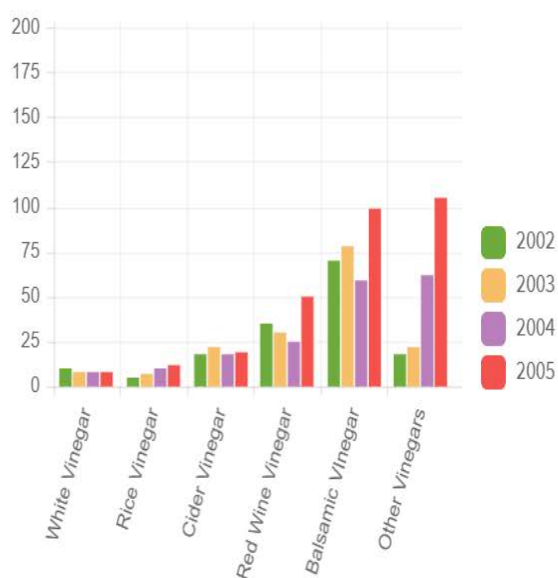
## Introduction

The word vinegar comes from the French word “*vinaigre*” which means “*sour wine*”. The origin of vinegar is directly connected to the discovery of wine. If wine is left open to air, it rapidly becomes acid and it turns into “*sour wine*”. Recognizable both by its smell and its pungent taste, this liquid has a long tradition. After analyzing the history and value of vinegar, we can conclude that it is one of the beautiful and great gifts given to mankind by nature. Vinegar has been part of the human diet since ancient times, being used mainly as a condiment and food preservative; It has also been used as a base for simple medicines for men and animals, being a common product in most Mediterranean countries [1, 2]. In France in the 16th century, vinegar was made from grapes, both for home consumption and for export. In England, vinegar was made from malt and in America it is not known with certainty since when, although it is thought that it was used very early as a household product, apple juice being the one that has been used for this purpose in the U.S [3].

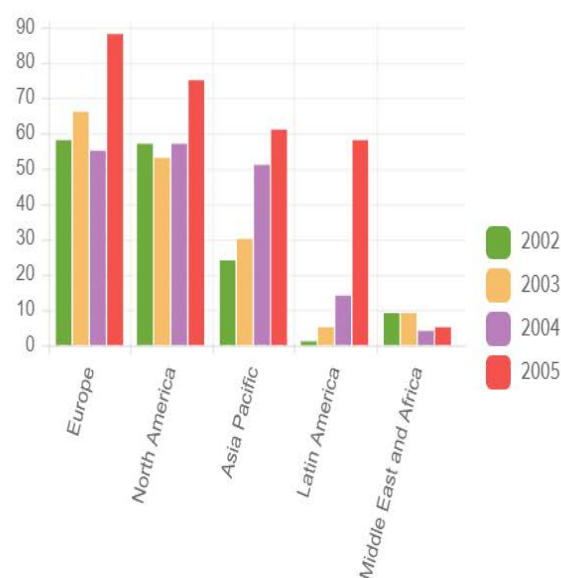
The production of vinegar in Republic of Moldova is carried out on a small scale compared to countries such as Spain and Italy, although currently the process of production and preparation of vinegar has been gaining importance and along with this the investigation of microorganisms responsible for the acetification process [4].

Vinegar is essentially a dilute solution of acetic acid made through the fermentation process and subsequent acetification, therefore sugar is the basis of vinegar production and any dilute solution of a fermentable sugar can be transformed into vinegar under favorable conditions. Although apple juice is the most widely used to make vinegar, any fruit or vegetable that contains an adequate proportion of sugar or other necessary and desirable substances will be used to make vinegar [5].

However, for acetification to be optimal, a series of specific requirements must be met, including both the supply of oxygen, the optimum temperature and the characteristics of the raw material as the content of sugars. The turbidity of the resulting vinegar is another problem that manufacturers are trying to eliminate in different ways. Various technological practices are used to achieve stable and clear vinegar. Clarifying vinegar with bentonite products is considered a rough but not expensive cleanup [7].



**Figure 1a.** Global vinegar introductions by vinegar Type (2002-2005) [10].

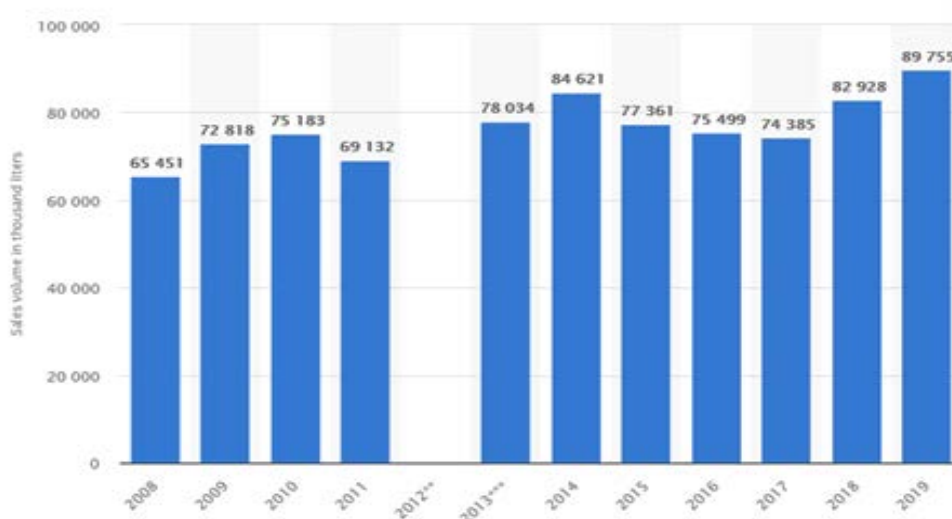


**Figure 1b.** Global Vinegar Introductions by Region (2002-2005) [10].

Economic data provided by researchers and the closeness with the wine industry (apple vinegar has a limited market share compared to wine) reveal the importance of this market and, consequently, the demand for improving understanding of economic and trade aspects of the vinegar industry. This need is imperative given that the vinegar market has received insufficient attention from researchers, who have mainly focused on specialty vinegars such as balsamic vinegar, sherry vinegar, and others [9].

Based on the data presented in Figure 1, the trend of growing interest in high-quality vinegar products was observed fifteen years ago, and this trend has not lost its interest in European countries, and now there is an increase in the production and development of the vinegar industry. IndexBox has published a new report: 'the European Union – Vinegar – Market Analysis, Forecast, Size, Trends and Insights' which says that the revenue of the vinegar market in the European Union amounted to \$871million in 2018, picking up by 3.4% against the previous year. The countries with the highest volumes of vinegar consumption in 2018 were Germany (232 million litres), France (183 million litres) and Italy (119 million litres), together accounting for 49% of total consumption. These countries were followed by Spain, the United Kingdom, Poland, the Netherlands, Belgium, Romania, the Czech Republic, Portugal and Austria, which together accounted for a further 41% [11].

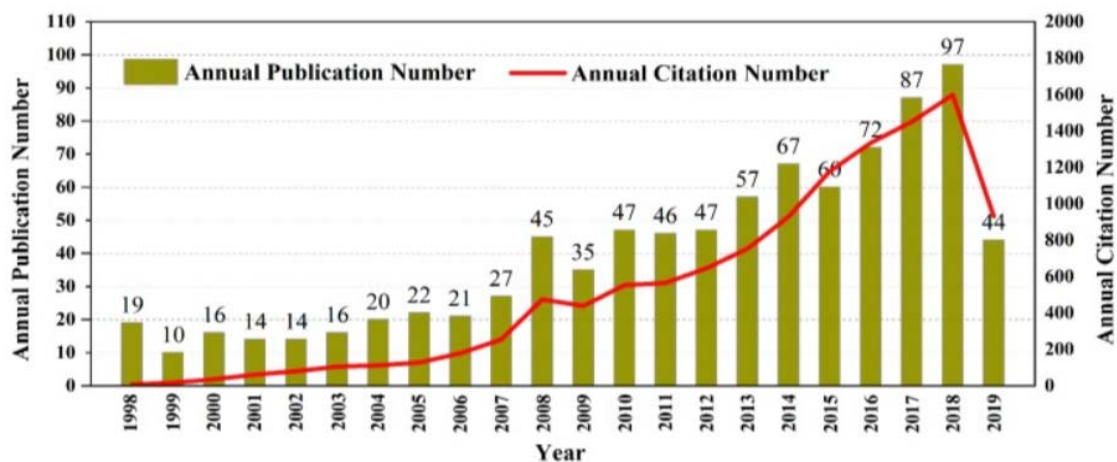
From 2007 to 2018, the most notable rate of growth in terms of vinegar consumption, amongst the main consuming countries, was attained by Austria, while vinegar consumption for the other leaders experienced more modest paces of growth. In value terms, Italy (\$214million), Germany (\$137million) and France (\$120million) constituted the countries with the highest levels of market value in 2018, together accounting for 54% of the total market. Spain, the Netherlands, the United Kingdom, Belgium, Austria, Poland, the Czech Republic, Romania and Portugal lagged somewhat behind, together accounting for a further 37%. The countries with the highest levels of vinegar per capita consumption in 2018 were the Netherlands (3,108 litres per 1000 persons), Germany (2,828 litres per 1000 persons) and France (2,800 litres per 1000 persons) [11]. This statistic on figure 2 shows the total manufacturing sales volume for vinegar in the United Kingdom (UK) from 2008 to 2019. In 2019 the sales volume of vinegar increased to an estimated 90 thousand liters [12].



**Figure 2.** Sales volume of vinegar manufactured in the UK in thousand liters (2008-2019) [12].

And also, were market forecast 2019-2025 for countries the European Union. Driven by increasing demand for vinegar in the European Union, the market is expected to continue an upward consumption trend over the next seven years. The market volume is forecast to expand with an anticipated CAGR (average annual growth rate) of +1.1% for the period from 2018 to 2025, which is projected to bring the market volume to 1.2 billion litres by the end of 2025 [11]. The production growth trend is also observed at wood vinegar. The increase in demand for chemical-free pesticides to improve soil fertility, growing need for organic food, bio-based agricultural inputs, wide use of the product in animal feed and medical applications are the factors fuelling the wood vinegar market. There is a soar in demand for wood vinegar as it helps to improve plant growth, maintains soil fertility, enhances generation seed, reduces odor, prevents pests, rotting and weed production. Poverty alleviation is an important factor driving the market as wood vinegar can be produced at small as well as large scale in villages, using local feedstock.

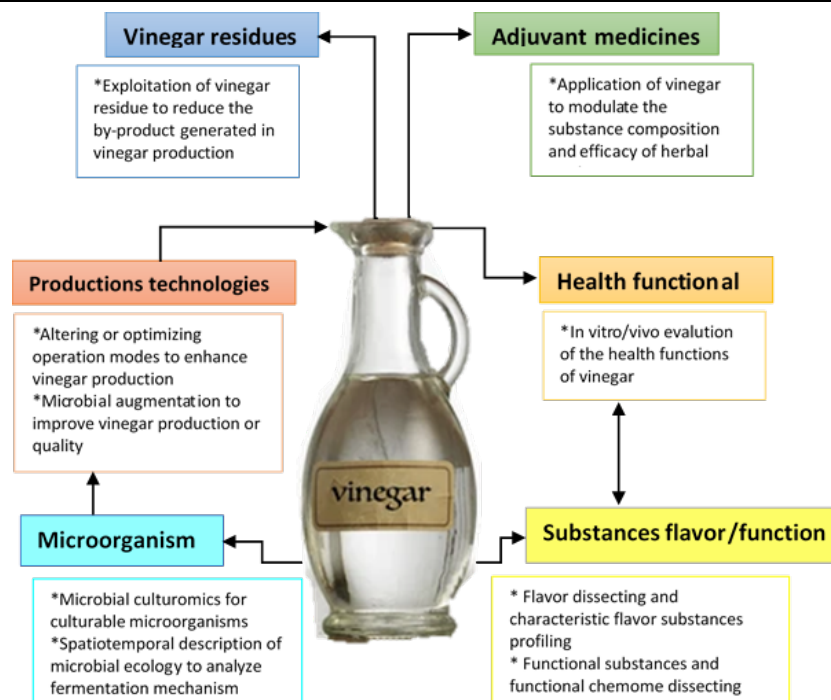
As per the report published by Fior Markets, the global wood vinegar market is expected to grow from USD 1.34 Billion in 2017 to USD 2.09 Billion by 2025 at a CAGR of 5.7% during the forecast period 2018-2025 [13]. The upward trend is observed not only in the production and consumption of vinegar, but also in the field of scientific research. Zhang, X. L., et al. (2020) analyzed the trend of research results and citation in the field of vinegar science. The trace of published articles shows the development speed and progress of research, while also reflecting the concentration of research in a certain field. As shown in figure 4, although some fluctuations were observed, the number of papers published increased over time. The number of published papers rose from 19 in 1998 to 97 in 2018. It should be noted that the retrieved number of published papers in 2019 was only 44; this is because records for only half of a year were available by the end of the retrieval date [14].



**Figure 3.** Annual publication and citation number from 1998 to 2019 at Web of Science [14]

As shown in Figure 7, a logic model illustrates the relationship among the research, divided into six main topics: substances, health functions, production technologies, adjuvant medicines, vinegar residues, the currently studied in the vinegar research area.

At present, most of the research relating to substance analysis in vinegar can be categorized into two classes: flavor and functional substances. The detection and isolation of substances in vinegar is predominantly performed by chromatography, while data matrix processing is done using chemometrics. Antioxidant activity represents the main research focus in relation to the health benefits of vinegar. This is probably because of the large number of studies on polyphenols, which are well-recognized antioxidants [14].



**Figure 4.** A logic model of related themes in current vinegar research areas [made based on the source14].

Other health functions including antiglycemic, hypolipidemic, antihypertensive, anti-obesity, antidiabetic, and immunoenhancement effects associated with vinegar were also extensively reported following both in vitro or/and in vivo evaluations. Owing to the low commercial value of most vinegars, technological innovation was often considered unprofitable [15]. However, with the development of a deeper understanding of microbial ecophysiology and fermentation mechanisms, technological innovations are constantly emerging. In addition to equipment upgrading, nowadays, technological innovations in vinegar production mainly focus on the enhancement of industrial vinegar production by altering or optimizing operation modes and microbial augmentation to improve vinegar production or quality [16, 17, 18]. Adjuvant medicines is a relatively insular research area compared with the major research areas in the knowledge domain. This topic involves the study of changes to substances and the efficacy of herbal medicines such as *Euphorbia kansui* [19, 20, 21] and *Radix bupleuri* [22, 23] following fry-baking with vinegar.

Last area of research concentrates on the extraction of vinegar residue. Representative articles from this domain include Ran et al.'s article [24] on the separation of acetate from fresh vinegar residue and the application of hydrothermal treatment on washed vinegar residue to enhance methane production, Song et al.'s article [25] on the evaluation of nitrogen excretion in laying hens following feeding with waste vinegar residue, and Du et al.'s article [26] on the application of vinegar residue for the control of *Fusarium* wilt in cucumbers.

#### **Applicable standards and legislation for vinegar in the world and in the Republic of Moldova**

Production vinegar is regulated by an extensive set of statutes, and the definition of word "vinegar" differs from country to country. FAO / WHO defines vinegar as any liquid intended for human consumption, produced exclusively from suitable products containing starch and / or sugars by the process of double fermentation, first alcoholic and then acetic.

The residual ethanol content must be less than 0,5% in wine vinegar and less than 1% in other vinegars [8].

European countries have regional standards for vinegar produced or sold in the area. The EU has set thresholds for acidity and ethanol content. "X-vinegar" is a general definition used for products with a minimum of 5% (w/v) acidity and a maximum of 0.5% (v/v) ethanol. Wine vinegar is obtained exclusively by acetic fermentation of wine and must have a minimum of 6% acidity (w/v) and a maximum of 1.5% (v/v) ethanol [9].

In the USA, the FDA (Food and Drug Administration) requires that vinegar products must contain at least 4 % acids. There are no FDA standards of identity for vinegar, however the "Compliance Policy Guides" establishes the labelling requirements for cider, wine, malt, sugar, sugar and vinegar blends [27].

In China, the term «vinegar» is used to indicate both fermented and artificial vinegar, according to the Chinese National Standard (CNS) definitions [28]. More recently, a new national standard code for Spices has been issued by the China State Administration Bureau for Quality and Technology, which introduces the definition of vinegar and the classification of vinegars as either fermentation or artificial products (acetic acid mixed with other ingredients, such as would be flavors).

In the Republic of Moldova exist two important arrangement documents which regulate the quality of vinegar, this is the state standard - SM SR EN 13188:2012 and government decision - HG nr.1403/2008. The decision of the Government of the Republic of Moldova HG defines vinegar as the liquid product intended for human consumption, obtained exclusively from raw materials containing starch and / or sugars by a double fermentation process, of which the first fermentation - alcoholic and the second fermentation - acetic [29]. And the state standard SM «Vinegar - product made from materials of agricultural origin» defines vinegar as a product obtained exclusively by the biological process of double fermentation, alcoholic and acetic, of liquids or other substances of agricultural origin [30].

And also, definitions of 13 types of vinegars are given, such as: wine vinegar, fruit and berry vinegar, fruit (wine) vinegar, berry vinegar, cider vinegar, spirit vinegar, grain vinegar, malt vinegar, whey vinegar, honey vinegar, spicy vinegar and aromatic vinegar, balsamic vinegar, food grade acetic acid [29].

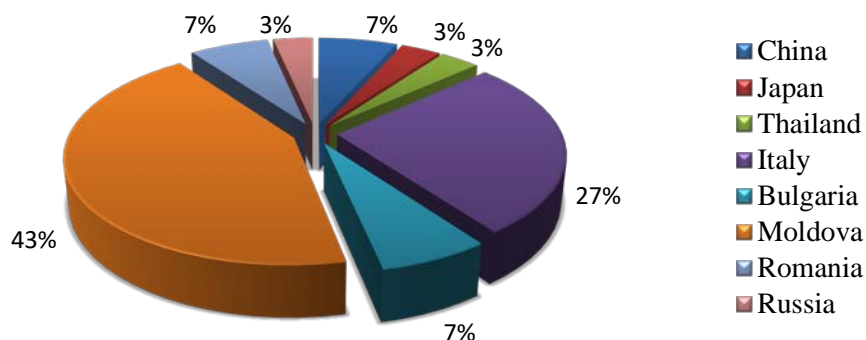
Ethanol and acetic acid values are frequently monitored during the overall acetic fermentation process and are parameters that are governed by local legislation. Traditional methods for analyzing these parameters consist of, for ethanol, distillation of ethanol, addition of a given volume of a standard solution of potassium di-chromate and back titration of the excess of this reagent, and for acetic acid, direct titration with sodium hydroxide in the presence of phenolphthalein [31]. Given the different laws on vinegar, it is clear that acidity and residual ethanol are the two main parameters used to establish an all-encompassing vinegar classification.

From the above data, it can be concluded that regulation of only 2 parameters does not protect consumers from falsification of vinegar products.

Therefore, a more precise distinction is required between genuine and wholly or partially synthetic "vinegar". Regulatory documents must include data with physical and chemical indicators (dry matter, ash, fixed acidity content, volatile acid content, etc.) for those types of vinegar that are produced and sold on the territory of the country.

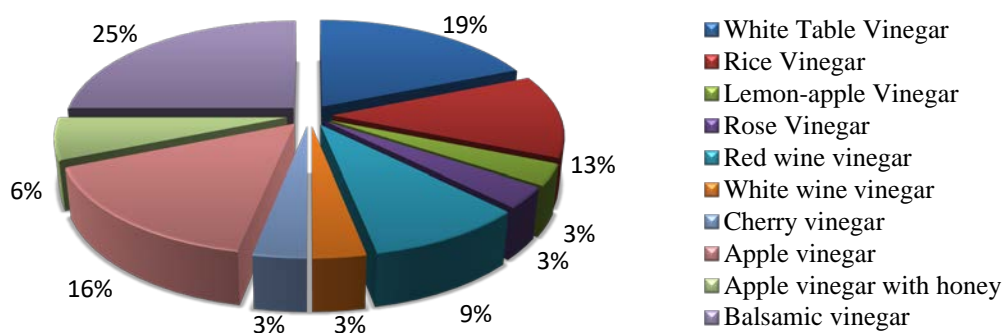
### Vinegar assortments on the Moldovan market

For market research have been chosen the largest supermarket chain with the largest assortment of vinegar products, such as: Metro Cash&Carry, Linella, Kaufland, №1, Fidesco, Green Hills, Fourchete, Velmart, Family Market. All investigated products were sorted by types and manufacturers, the results of which are presented in the figures 5 and 6.



**Figure 5.** Countries of origin of vinegars present in the commercial networks of the Republic of Moldova.

Following the analysis of the vinegar assortment we identified that 58% are imported, most of them are balsamic vinegars imported from Italy - 23%. And unsurprisingly, balsamic vinegar is considered the most common and consumed product. Italy is followed by vinegars from Romania, Bulgaria and China each being present in a proportion of 7%. Other vinegars are produced in Japan, Russia, Thailand are found in insignificant quantities. The large presence of Asian producers speaks of the expansion and introduction of Asian cuisine by Moldovan HoReCa.



**Figure 6.** The types of vinegar on the market of Moldova.

The assortment of vinegar products is presented in the figure 6, the diagram shows that two types of vinegars: balsamic and white table vinegar, are found in large quantities and assortment on the Moldovan market. It was noticed that white table vinegar is presented with 6 and 9% acetic acid content and is produced in particular only by local producers. They are followed by apple cider – 16%, rice vinegar – 13% and red wine vinegar – 9%. As it was noted that the amount of rice vinegar dominates over wine vinegars, this can only indicate that the Moldovan cuisine uses less vinegar than the Asian cuisine.

To find out how wide the range of vinegar products is in the Republic of Moldova, it was compared with the assortment at the international level from the book "Vinegars of the World".



Table 1

**Comparative analysis of the assortment of vinegar in Moldova and globally [35]**

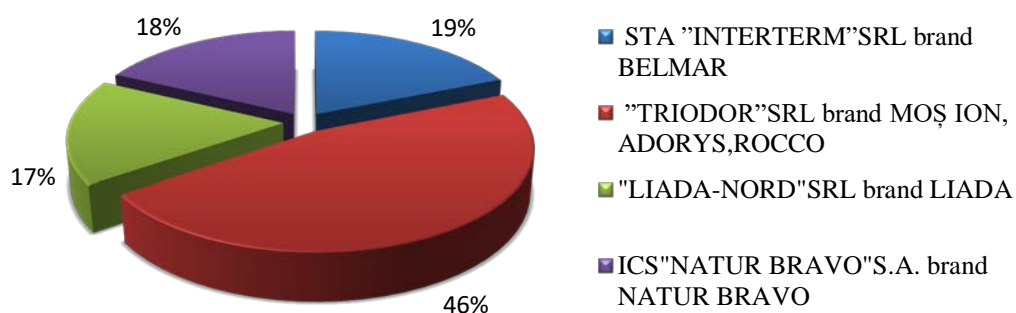
<b>Categories</b>	<b>Overview of vinegars around the world</b>	<b>Overview of vinegars in Republic of Moldova</b>
Vegetable*, cereals	Rice vinegar	Rice vinegar
	Bamboo vinegar	-
	Malt vinegar	-
	Palm (toddy) vinegar	-
	Beer vinegar	-
	Black vinegar	-
	Kombucha vinegar	-
	Onion vinegar	-
	Tomato vinegar	-
	Cane vinegar	-
	-	Table vinegar
Fruit, berries	Apple cider vinegar	Apple cider vinegar
	Raisin (grape) vinegar	-
	Wine vinegar	Wine vinegar
	Sherry (jerez) vinegar	-
	Balsamic vinegar	Balsamic vinegar
	Coconut water vinegar	-
	Date vinegar	-
	Mango vinegar	-
	Jujube vinegar	-
	Raspberry vinegar	-
	Blackcurrant vinegar	-
	Blackberry vinegar	-
	Mulberry vinegar	-
	Plum vinegar (Ume-su)	-
	Cranberry vinegar	-
Persimmon vinegar	-	
	-	Cherry vinegar
Animal	Whey vinegar	-
	Honey vinegar	-

\*-Vegetable is not a botanical term and is used to refer to an edible plant part; some botanical fruits, such as tomatoes, are also generally considered to be vegetables

From the data presented in the table 1 it can be noted that out of 28 types of vinegar presented in the book "Vinegars of the World" only 6 types are found on the Moldovan market [35]. Analyzing by category and type of raw materials used for fermentation, it can be noted that out of 10 vinegars from vegetables and grains, only imported rice vinegar is present in Moldova. Although an agrarian country like Moldova is capable of producing such types as onion vinegar, tomato vinegar and possibly even malt vinegar.

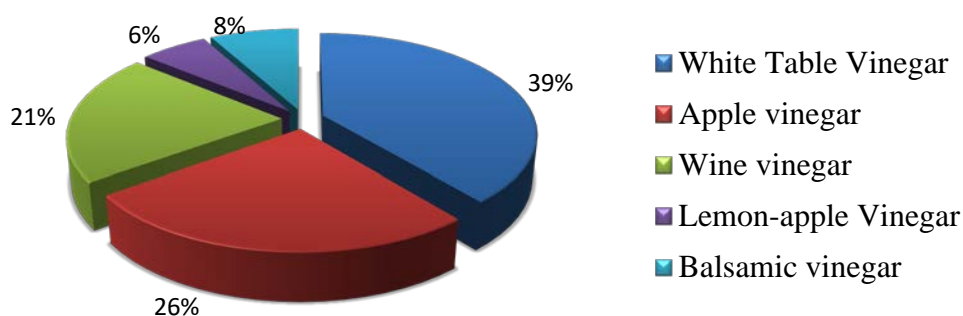
There are only 4 types of fruit and berry vinegars on the Moldovan market: apple cider vinegar, white and red wine vinegar, balsamic vinegar, cherry vinegar. Rose vinegar is not

taken into account because it is flavored vinegar, which can be based on almost any kind of vinegar. For the development of the economy in the field of vinegar production, it is possible to propose to use local fruits and berries, which the country has in full and these types of vinegars are absent on store shelves, such as: from plums, from raspberries, from black currants, from blackberries and mulberries. According to the National Food Safety Agency (ANSA), in 2019, more than 7 thousand apiaries were officially registered in Moldova [36], which confirms the possible production of honey vinegar. In figure 7, were analyzed the local producers and the range of vinegars which they produce.



**Figure 7.** Structure of the vinegar market by producers in the Republic of Moldova.

Examining the assortment of vinegar products, it was revealed that only 4 manufacturers represent local products. After analyzing the products they offer, we can say that all four manufacturers have in their assortment white table vinegar 6% and 9%, apple cider vinegar, as well as wine vinegar, but it should be noted that red wine vinegar dominates in terms of quantity. Only one manufacturer - "Triodor" S.R.L. producing under four brands MOȘ ION, NORA, ADORYS, ROCCO, in the assortment counted 7 types of vinegars, of which balsamic vinegar and apple cider vinegar with honey, which were not available from other manufacturers.



**Figure 8.** Assortment of vinegars from local producers in the Republic of Moldova.

The data of figure 8 show that of the entire range of local production, almost 40% is table vinegar, with an acetic acid content of 6% and 9%.

This is followed by apple cider vinegar in a volume of 26%, but wine vinegar is inferior to apple cider vinegar by 5%. After analyzing the data, we can say that local agricultural products are little used in the production of vinegar, which is unacceptable for an agricultural country.

And it is necessary to develop projects for the development of vinegar production based on the use of local resources, not only for economic purposes, but also to increase the range and quality of vinegar products in the Republic of Moldova.



## Conclusions

Production of vinegar is taken over global level having differential raw material, bacterial species as well as production mechanization. Following market research in Moldova was identified vinegars assortment on the shelf's distribution network. After analyzing assortment of vinegars, we identified that 57% is imported, most of them are balsamic vinegars from Italy with 23% of the total and only 43% are indigenous. Thus, it was identified which are the largest producers on the Moldovan market, these being: brand BELMAR - STA" Interterm" S.R.L., brands MOȘ ION, NORA, ADORYS, ROCCO -" Triodor" S.R.L., brand NATUR BRAVO - ICS" Natur Bravo" S.A., brand LIADA -" Liada-Nord" S.R.L. which produce the same range of vinegars. This analytical work presents the current state of affairs in the vinegar industry in Moldova. The data shows that the market is still not filled with quality local vinegar. The rapid development of the wine industry in recent years indicates the availability of a raw material base for the production of wine vinegar [37]. In cases of force majeure circumstances or poor-quality raw materials not suitable for wine, vinegar production can be an alternative for using fully agricultural products.

**Acknowledgments.** The research was funded by State Project 20.80009.5107.09 "Improving of food quality and safety through biotechnology and food engineering", running at Technical University of Moldova.

## References

1. Barja F., Mesa M., Macías M., Bermudez I., Cantero D., Lopez J. (2003). Aspectos bioquímicos, moleculares y morfológicos de las bacterias acéticas. In: Mas, A. (Ed.). *Primeras Jornadas de I + d + i en la Elaboración de Vinagres de Vino*. España, Pp 17-20.
2. Carbó R., De Castro J., Pujola M. (2003). Estudio de la calidad de los vinagres véricos comerciales. *Primeras Jornadas de I + d + i en la Elaboración de Vinagres de Vino*. España, pp 45-52
3. Muscatine D. (2003). The Vinegar of Spilamberto. *Gastronomica* 3(3):14–19. Disponibil: <https://doi.org/10.1525/gfc.2003.3.3.14> [accesat 10.03.2021].
4. Boistean A.V., Chirsanova A.I., Rubtov S.L., Chiselita N. (2020), Identification of the optimal source for isolation of acetic bacteria, *Vsyo o Myase*, ISSN: 2071-2499, DOI: <https://doi.org/10.21323/2071-2499-2020-55-59-62>
5. Bamforth W.C. (2005) Vinegar In:Food,fermentation and micro-organisms.Blachwell Science. *Kundli* pp.154-159.
6. Chang R.C., Lee H.C., Ou A.S.M. (2005). Investigation of the Physicochemical Properties of Concentrated Fruit Vinegar. *Journal of Food and Drug Analysis*, 13: 348-356.
7. Boistean A., Chirsanova A., Ciurac J., Gaina B. (2020),The particularities of the clarification process with bentonite of white wine vinegar.*Food Systems.*; 3(1), pp. 25-32. <https://doi.org/10.21323/2618-9771-2020-3-1-25-32>
8. FAO/WHO Food Standards Programme (1998) Conversion of European Regional Standard for Vinegar into World-wide Standard. Report No: FAO-ESN-CX/PFV-98/8. Codex Committee on Processed Fruits and Vegetables. Sess 19. Washington, DC, 16-18 March 1998. FAO, Rome.
9. Council Regulation (EC) No 1493/1999 of 17 May 1999 on the common organization of the market in wine. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31999R1493> [accesat 10.03.2021].
10. Mintel Custom Solutions Data Presented at 2006 VI Annual Meeting, Disponibil: <https://versatilevinegar.org/market-trends/> [accesat 10.03.2021].
11. <https://www.globaltrademag.com/vinegar-market-in-the-eu-increases-for-the-third-consecutive-year-reaching-871m/> [accesat 10.03.2021].
12. <https://www.statista.com/statistics/484745/vinegar-volume-sales-in-the-united-kingdom-uk/>
13. <https://www.globenewswire.com/news-release/2020/02/13/1984831/0/en/Global-Wood-Vinegar-Market-is-Expected-to-Reach-USD-2-09-Billion-by-2025-Fior-Markets.html> [accesat 10.03.2021].
14. Zhang, X.L., Zheng,Y., at all.(2020)Knowledge Domain and Emerging Trends in Vinegar Research: A Bibliometric Review of the Literature from WoSCC. *Foods* (Basel, Switzerland), 9(2), 166. Disponibil: <https://doi.org/10.3390/foods9020166> [accesat 10.03.2021].

15. Gullo M., De Vero L., Giudici P. (2009), Succession of selected strains of *Acetobacter pasteurianus* and other acetic acid bacteria in traditional balsamic vinegar. *Appl. Environ. Microbiol.*, 75, 2585–2589.
16. Schlepütz T., Büchs J. (2013) Investigation of vinegar production using a novel shaken repeated batch culture system. *Biotechnol. Prog.* 29, 1158–1168.
17. Xia X., Zhu X., Yang H., Xin Y., Wang W. (2015) Enhancement of rice vinegar production by modified semi-continuous culture based on analysis of enzymatic kinetic. *Eur. Food Res. Technol.* 241, 479–485.
18. Qi Z., Dong D., Yang H., Xia X. (2017) Improving fermented quality of cider vinegar via rational nutrient feeding strategy. *Food Chem.* 224, 312–319.
19. Zhang Q., Zhang K.C., et al. (2018) Simultaneous quantification of twelve compounds in ethyl acetate extracts of *Euphorbia kansui* before and after fry-baked with vinegar by UPLC–MS/MS and its toxic effect on zebrafish. *J. Pharm. Biomed. Anal.* 155, 169–176.
20. Lou J.W., Cao L.L. et al. (2018) The toxicity and efficacy evaluation of different fractions of Kansui fry-baked with vinegar on Walker-256 tumor-bearing malignant ascites effusion rats and normal rats. *J. Ethnopharmacol.*, 219, 257–268.
21. Jiang D., Kang A. et al. (2018) *Euphorbia kansui* fry-baked with vinegar modulates gut microbiota and reduces intestinal toxicity in rats. *J. Ethnopharmacol.* 226, 26–35.
22. Xing J., Sun H.M., Li Z.Y., Qin X.M. (2015) Comparison of volatile components between raw and vinegar baked *Radix bupleuri* by GC-MS based metabolic fingerprinting approach. *Evid. Based Complement. Altern. Med.* 653791.
23. Li Z.Y., Sun H.M., Xing J., Qin X.M., Du G.H. (2015) Chemical and biological comparison of raw and vinegar-baked *Radix bupleuri*. *J. Ethnopharmacol.* 165, 20–28.
24. Ran G., Li D., Zheng T., Liu X., Chen L., Cao Q., Yan Z. (2018) Hydrothermal pretreatment on the anaerobic digestion of washed vinegar residue. *Bioresour. Technol.* 248, 265–271.
25. Song Z.T., Dong X.F., Tong J.M., Wang Z.H. (2012) Effects of waste vinegar residue on nutrient digestibility and nitrogen balance in laying hens. *Livest. Sci.* 150, 67–73.
26. Du N., Shi L., Du L., Yuan Y., Li B., Sang T., Sun J., Shu S., Guo S. (2015) Effect of vinegar residue compost amendments on cucumber growth and Fusarium wilt. *Environ. Sci. Pollut. Res.* 22, 19133–19141.
27. CPG Sec 525.825 Vinegar, Definitions - Adulteration with Vinegar Eels, 1995, Disponibil: <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cpg-sec-525825-vinegar-definitions-adulteration-vinegar-eels> [accesat 10.03.2021].
28. Chinese National Standard, CNS 14834:2014 Edible vinegar, N5239 - Agriculture, Food, Disponibil: [http://cns-standards.org/CNS\\_standard.asp?CODE=CNS%2014834](http://cns-standards.org/CNS_standard.asp?CODE=CNS%2014834) [accesat 10.03.2021].
29. Hotărârea Guvernului cu privire la aprobarea Reglementării tehnice” Oțeturi și acid acetic de uz alimentar”: nr. 1403 din 09,12,2008. Disponibil: [https://www.legis.md/cautare/getResults?doc\\_id=111718&lang=ro](https://www.legis.md/cautare/getResults?doc_id=111718&lang=ro)
30. SM SR EN 13188:2012 «Vinegar – product made from materials of agricultural origin», Disponibil: <https://shop.standard.md/public/client/#client-standard-surface> [accesat 10.03.2021].
31. Compendium of methods of analysis of wine vinegars, Office International O.I.V., Paris, France, Occurrence 2018. Disponibil: <https://www.oiv.int/en/normes-et-documents-techniques/methodes-danalyse/recueil-des-methodes-danalyse-des-vinaigres-de-vin> [accesat 10.03.2021].
32. Galletto L., Rossetto L. (2015) A hedonic analysis of retail Italian vinegars, *Wine Economics and Policy*, Volume 4, Issue 1, Pages 60-68, ISSN 2212-9774.
33. Spectral Database for Organic Compounds, SDBS. [online]. [accesat 10.03.2021]. Disponibil: [http://sdb.sdb.aist.go.jp/sdb/cgi-bin/cre\\_index.cgi](http://sdb.sdb.aist.go.jp/sdb/cgi-bin/cre_index.cgi).
34. Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste, In: *Official Journal of the European Communities* [online]. 28.12.2000, L 332/109-L332/111. Disponibil: [http://www.central2013.eu/fileadmin/user\\_upload/Downloads/Document\\_Centre/OP\\_Resources/Incineration\\_Directive\\_2000\\_76.pdf](http://www.central2013.eu/fileadmin/user_upload/Downloads/Document_Centre/OP_Resources/Incineration_Directive_2000_76.pdf) [accesat 10.03.2021].
35. Solieri L., & Giudici P. (2009). *Vinegars of the World*. Milano: Springer Milan, p.3-4, ISBN: 978-88-470-0865-6
36. [http://www.ansa.gov.md/uploads/files/Transparenta/Raport%20planul%20multianual%20de%20control%202018%20\(3\)%20modificat.pdf](http://www.ansa.gov.md/uploads/files/Transparenta/Raport%20planul%20multianual%20de%20control%202018%20(3)%20modificat.pdf) [accesat 10.03.2021].
37. <https://wine-and-spirits.md/ro/anul-vitivinicol-2019/> [accesat 10.03.2021].

[https://doi.org/10.52326/jss.utm.2021.4\(2\).14](https://doi.org/10.52326/jss.utm.2021.4(2).14)  
UDC 347.2:620.2(478)



## THE NOTION, CLASSIFICATION AND IMPORTANCE OF GOODS CLASSIFICATION IN THE LIGHT OF THE NEW CIVIL REGULATIONS OF REPUBLIC OF MOLDOVA

Viorica Ursu\*, ORCID ID: 0000-0003-4194-4799,  
Natalia Chiriac, ORCID ID: 0000-0002-1189-2273

*Technical University of Moldova, 168, Ștefan cel Mare bd., Chișinău, Republic of Moldova*

\*Corresponding author: Viorica Ursu, [viorica.ursu@dp.utm.md](mailto:viorica.ursu@dp.utm.md)

Received: 04. 12. 2021

Accepted: 05. 17. 2021

**Abstract.** Any natural or legal person has a heritage, i.e. a set of rights and obligations that are assessable in money or in other words, with economic value. The rights, obligations and goods to which they refer may be considered individually or as a legal universality belonging to a person. The goods are, without any doubt, the basis of the social wealth of any country and any society. The economic relations are mostly the relations about certain goods. Once they have acquired a legal form, they do not change their content, keeping the same object - goods. Therefore, the correct reflection of the place and role of goods in social relations is essential for the efficient management of the country's economy. According to the unanimous opinion of the legislator, theorists and practitioners, goods are one of the main objects of civil law. Thus, this article represents a synthesis that analyzes the notion of goods, as well as their classification and importance in the new regulation of the Republic of Moldova's Civil Code. This research is also important due to the fact that the new changes are related to some categories of new goods, but also the completion of the existing ones, which were not found in the previous rules, but which were introduced due to the development of new social relations and new categories of goods that have appeared in our society.

**Keywords:** *goods, work, heritage, asset, heritage right, economic value.*

**Adnotare.** Orice persoană fizică sau juridică are un patrimoniu, adică un ansamblu de drepturi și obligații care sunt evaluabile în bani sau altfel spus, cu valoare economică. Drepturile, obligațiile și bunurile la care se referă acestea pot fi luate în considerare în mod individual sau ca o universalitate juridică aparținând unei persoane. La rândul său bunurile, constituie, fără îndoială, baza bogăției sociale a oricărei țări și a oricărei societăți. Relațiile economice sunt în cea mai mare parte relații despre anumite bunuri. După ce au dobândit o formă juridică, nu își schimbă conținutul, păstrând același obiect – bunuri. Prin urmare, reflectarea corectă a locului și rolului bunurilor în relațiile sociale este esențială pentru gestionarea eficientă a economiei țării. Conform opiniei unanime a legiuitorului, a

teoreticienilor și a practicienilor, bunurile reprezintă una dintre principalele obiecte din dreptul civil. Astfel, prezentul articol reprezintă o sinteză care pune în discuție noțiunea de bun, cât și clasificarea și importanța bunurilor în noua reglementare a CC a RM. Această cercetare este importantă și datorită faptului, că noile modificări țin de unele categorii de bunuri noi, dar și completarea celor deja existente, care nu s-au regăsit în normele anterioare, dar care au fost introduse datorită dezvoltării noilor relații sociale și noilor categorii de bunuri apărute în societatea noastră.

**Cuvinte cheie:** *bun, lucru, patrimoniul, activul patrimonial, drept patrimonial, valoare economică.*

**1. Introducere.** În raporturile juridice patrimoniale, conduita părților se referă adesea la lucruri. De regulă, însă, lucrul este luat în considerare ca obiect derivat al raportului juridic civil. Astfel, bunurile constituind doar un obiect material al acestei acțiuni sau inacțiuni. Bunurile sunt numite și obiecte externe al raportului juridic civil. Deși majoritatea obiectelor derivate ale raportului juridic civil sunt bunurile, acestea nu sunt unice, ca ex: anumite valori personale nepatrimoniale ca imaginea, reputația, operele literare, artistice, științifice, rezultatele creației intelectuale, serviciile [1, p. 235].

**2. Noțiunea de bun.** Într-un prim înțeles, termenul *bun* desemnează orice lucru cu privire la care pot exista drepturi (și obligații) patrimoniale. Într-un al doilea înțeles, mai larg, termenul *bun* desemnează orice element al activului patrimonial al unei persoane; cu alte cuvinte, *bunul*, în sens larg, se referă nu numai la lucruri, ci și la drepturile privitoare la acele lucruri [2, p. 209].

Bunul, în sens restrâns, reprezintă valoarea economică ce este utilă pentru satisfacerea nevoilor materiale și spirituale ale omului și care este susceptibilă de apropiere (însușire) sub forma drepturilor patrimoniale [3, p. 97].

Codul civil al RM, în art. 455 alin. (1), dispune că „*bunurile sunt toate lucrurile susceptibile apropierii individuale sau colective și drepturile patrimoniale*”. În sensul atribuit de legiuitor termenului *bun* din articolul nominalizat, acesta include orice element al activului patrimonial al persoanei, adică atât lucrurile și animalele, cât și drepturile asupra lor sau, altfel spus, atât lucrurile, cât și drepturile patrimoniale care pot fi reale și obligaționale. De exemplu, bunuri sunt lucrurile care au existență materială și valoare economică, operele științifice, literare, artistice, invențiile etc. dacă au valoare economică și sunt susceptibile de drepturi patrimoniale, drepturi de creață[1, p. 236 - 237].

Prin urmare, legiuitorul, în categoria de bunuri a inclus atât lucruri, cât și drepturile patrimoniale. După cum se poate observa, CC RM face distincție între bun și lucru [4, p. 39]: *Lucruri sunt obiectele corporale în raport cu care pot exista drepturi și obligații civile.* Corelația dintre bun și lucru, conform dispozițiilor art.455, constă în faptul că bunul este genul, iar lucrul este specia. În majoritatea cazurilor, Codul civil utilizează termenul bun, chiar și atunci când, evident, este vorba de lucruri (de exemplu în art. 458 - 471, 482 - 496, 500 - 530, 536 - 542 etc.). Doar în câteva articole din cod este utilizat termenul lucru [5, art. 458, 460 - 461, 1108].

Și doctrina face distincție între bun și lucru. Putem defini astfel bunul ca fiind *acea valoare economică ce este utilă pentru satisfacerea nevoilor materiale și spirituale ale omului și este susceptibilă de apropiere sub forma dreptului patrimonial* [6, p. 78].

În literatura de specialitate este susținută ideea că prin lucru se înțelege „*tot cea ce există în realitate sau numai în imaginație*”, ori, „*tot ceea ce se află în natură și este perceptibil prin simțuri, adică tot ceea ce are o existență materială*”.

Cu alte cuvinte, prin lucru se înțelege tot ceea ce se află în natură, fiind perceptibil prin simțuri, având o existență materială (terenuri, case, autoturisme etc.). Uzual, în drept, lucrurile iau numele de bunuri, avându-se în vedere avantajele pe care acestea le procură omului. De aceea, în majoritatea cazurilor se susține că prin bunuri se înțeleg lucrurile utile omului pentru satisfacerea necesităților sale materiale și culturale, susceptibile de apropiere, sub forma drepturilor patrimoniale [1. p. 237-238].

Pentru ca să devină bun în sens juridic, un lucru trebuie:

- a) să fie util omului;
- b) să aibă o valoare economică;
- c) să fie susceptibil de apropiere, sub forma unor drepturi ce intră în componența unui patrimoniu, a unei persoane fizice, fie al unei juridice. Numai în cazul în care lucrul întrunește aceste trei calități se poate vorbi de bun în sensul dreptului civil.

Unele lucruri nu pot fi considerate bunuri, deoarece nu sunt susceptibile apropierii, după cum o cere și art. 455 alin. (1). Atribuim acestei categorii de lucruri luna, soarele și alte corpuri cerești, care, deși au valoare economică și sunt utile omului, nu pot fi apropiate prin folosire, prin ocupație sau prin alte mijloace. La fel, nu poate fi însușit sau să se facă stăpân nici pe aerul atmosferic. Se poate pune totuși o întrebare: oare „aerul din Carpați” comercializat în orașe mari, unde aerul e foarte poluat, în recipiente speciali, nu sunt exemple potrivit cărora condiția referitoare la susceptibilitatea de a fi însușite, sub forma drepturilor patrimoniale, este relativă?

Probabil, unele dintre aceste lucruri cândva vor putea fi considerate bunuri în sensul dreptului civil. De exemplu, nu este exclus faptul că omul cândva va locui pe Lună sau pe alte planete, care, la momentul actual, nici nu sunt cunoscute [7, p. 92 - 93].

Astfel, un autor [8], pe buna dreptate, apreciază: „...aceste condiții sunt relative în timp și în spațiu și trebuie privite în perspectiva istorică, lucruri inutile la un moment dat pot deveni apoi utile (de pilda reciclarea deșeurilor), sau nesuscetibile de apropiere (ca spațiul cosmic de pilda) putând deveni, în viitor, obiecte ale unor drepturi (sub forma resurselor minerale extrase din alte corpuri cerești, sau a resurselor energetice oferite de vântul solar)”.

În ultimul timp, se discută asupra faptului dacă organele omului pot fi considerate bunuri.

Așadar, după părerea autoarei ruse Krasavcikova, organele și țesuturile umane reprezintă valori personale nepatrimoniale, în legătură cu care apar relații civile pe fundalul actului de donație și transplant, iar după extragerea materialului biologic de la o persoană concretă acestea își pierd determinarea lor personal-individuală [9, p. 101].

Cea mai răspândită viziune este însă aceea conform căreia organele și țesuturile detașate de organism se atribuie la categoria de bunuri limitate în circuitul civil [10, p. 87].

Corpul uman nu poate fi privit ca un bun și nu poate face obiectul unui raport juridic patrimonial. Această concluzie se impune cu titlu de principiu general, chiar dacă nu este prevăzută expres în legislația în vigoare, dar ea poate fi dedusă din alin.(1) art.27 și alin.(2) al art. 28 din Legea nr. 42 din 06.03.2008 [11].

Art. 44 al CC prevede expres că orice acte juridice care au ca obiect conferirea unei valori patrimoniale corpului uman, elementelor sau produselor sale sunt lovite de nulitate absolută, cu excepția cazurilor expres prevăzute de lege.

De asemenea, art.27 al Legii privind transplantul de organe, țesuturi și celule umane [11] interzice obținerea de profituri financiare ca urmare a donării de organe, țesuturi sau celule umane. Donarea și transplantul de organe, țesuturi și celule nu pot constitui obiectul unei tranzacții materiale. Se interzice popularizarea necesității transplantului de organe, țesuturi și/sau celule în scopul de a propune sau a obține profituri financiare sau avantaje corespunzătoare.

În contextul dispozițiilor art.455, se poate spune că orice lucru este un bun, dar nu orice bun este un lucru. Astfel, se confirmă o dată în plus corelația dintre acești doi termeni: de gen (bun) și de specie (lucru) [7, p. 93].

Pornind de la conținutul art.455, bunul poate fi definit ca lucru față de care pot exista drepturi și obligații patrimoniale și care poate fi folosit în viața socială, precum și ca drept patrimonial [7, p. 94].

Un loc aparte în Codul civil îl ocupă reglementările referitoare la animale. Art. 457 prevede: „*Animalele nu sunt lucruri. Ele sunt ocrotite prin legi speciale. În privința animalelor se aplică dispozițiile referitoare la lucruri, cu excepția cazurilor stabilite de lege*”.

Din conținutul acestei norme reiese că, deși animalele nu pot avea calitatea de subiect de drept, ele nu sunt egalate cu lucrurile și, în privința lor, se instituie reguli speciale de comportament al subiectelor de drept. De exemplu, o reglementare specială există în art. 517 alin. (3) din Codul civil, care prevede modalitatea de dobândire a dreptului de proprietate asupra bunului găsit. Această particularitate constă în faptul că dacă o persoană a dobândit, în conformitate cu art. 517 dreptul de proprietate asupra unui animal, fostul proprietar poate, în cazul în care se va constata existența unei afecțiuni în privința sa din partea animalului sau comportamentul crud al noului proprietar față de animal, să ceară restituirea acestuia [1, p. 239].

Legislația RM stabilește pedepse pentru cruzimea față de animale [12, art. 222<sup>1</sup>; 8, art. 157].

Deși animalele nu sunt considerate lucruri, totuși, în ceea ce privește modul de dobândire, posesiune, folosință, dispoziție sunt aplicabile regulile cu privire la lucruri, excepție făcând cazurile prevăzute de lege. Prin urmare, și asupra animalelor oamenii, în principiu, pot avea aceleași drepturi: dreptul de proprietate, dreptul de închiriere, dreptul de a le vinde, dona, a le da în folosință etc. [7, p.94].

### **3. Noțiunea de *bun*, în sensul art.1 din Protocolul nr.1 la Convenția Europeană a Drepturilor Omului.** Convenția nu dă nicio definiție a termenului *bun*, de aceea, elementele acestei noțiuni trebuie căutate în jurisprudența de la Strasbourg.

Se poate face o deducție generală că termenul *bunuri*, așa cum este utilizat în art. 1, acoperă trei mari categorii: drepturile reale, în sensul clasic al termenului, drepturile personale și drepturile nemateriale [13, p. 476].

În plus, pentru a intra în domeniul de aplicare al art.1, un bun trebuie să corespundă unui anumit număr de criterii: el trebuie să fie suficient de individualizabil și cuantificabil și să poată face obiectul unei transmise. De exemplu, un permis de conducere nu este un obiect de proprietate. El nu depinde de altfel, în dreptul francez, de regimul de drept comun de restituire a obiectelor sechestrate. Această afirmație trebuie totuși nuanțată cu recunoașterea pretoriană a bunurilor „nemateriale”. Anume din astfel de considerente

Curtea de Casație a recunoscut „o valoare patrimonială” numărului de cod al unei cărți bancare [13, p. 476].

În plus, un bun, în principiu, trebuie să fie actual și să existe la momentul atingerii: nu poate fi vorba de un drept potențial sau aleatoriu. Astfel, în cauza *Van der Mussele*, Curtea a estimat că nu puteau constitui un bun onorariile datorate unui avocat numit din oficiu și pe care acesta nu le-a primit din cauza incapacității de plată a clientului său, acestea având în speță un caracter viitor și nesigur.

Cu toate acestea, se pare că nu mai este absolut necesar ca bunul să fie realizabil: o creanță vizavi de stat este considerată un bun în sensul Convenției, soluție adnotată de Curte privind creditul de TVA, speță în care ea a considerat un bun „speranța legitimă de a obține rambursarea [de TVA plătită pe nedrept]” [1, p. 241].

Fosta Comisie a estimat că pentru a răspunde criteriilor din art.1, Prot. ad., bunul trebuie să aibă „o valoare nesupusă riscurilor vieții economice”. Această decizie, de altfel izolată, este foarte criticabilă în măsura în care referința la „riscurile vieții economice” este periculoasă, căci este aplicabilă tuturor bunurilor, fie reale (fluctuațiile de pe piața imobiliară, deprecierea în timp a valorii unui vehicul) sau nemateriale (pachet de acțiuni a căror valoare în timp nu este niciodată fixă); anume cu ocazia unei spețe privind un portofoliu de valori mobiliare fosta Comisie va reveni la o jurisprudență total opusă, atitudine adoptată ulterior și în cauza *Lupuleț c/României*.

În schimb, un drept de proprietate stins sau pierdut prin prescripție nu mai este un bun în sensul Protocolului nr.1: „Speranța de a obține recunoașterea dreptului de succesiune asupra unui vechi drept de proprietate care nu este susceptibil de exercitare efectivă de mult timp (...) nu mai constituie un bun în sensul art. 1”. În plus, dreptul de proprietate trebuie dovedit cu ajutorul unui titlu sau al unui alt mod de probă admis de legislația statului. De exemplu, în dreptul francez anumite documente administrative nu sunt suficiente pentru stabilirea proprietății, cum ar fi certificatul de înmatriculare a unui autovehicul, care doar atestă înmatricularea acestuia și permite punerea sa în circulație [13, p. 477].

**4. Clasificarea bunurilor.** Varietatea bunurilor și necesitatea stabilirii regimului lor juridic impun o clasificare a lor. Codul civil clasifică bunurile după cum urmează:

1. Bunuri aflate în circuitul civil, bunuri scoase din circuitul civil și bunuri limitate în circuitul civil [5, art. 457];

2. Bunuri imobile și bunuri mobile [5, art. 459];

3. Bunuri divizibile și bunuri indivizibile [5, art. 466];

4. Bunuri principale și bunuri accesorii [5, art. 467];

5. Bunuri fungibile și bunuri nefungibile [5, art. 468];

6. Bunuri determinate individual și bunuri determinate generic [5, art. 469];

7. Bunuri consumptibile și bunuri neconsumptibile [5, art. 470];

8. Bunuri ale domeniului public și bunuri ale domeniului privat [5, art. 471];

9. Universalități de bunuri [5, art. 472];

10. Bunurile frugifere și bunuri nefrugifere [5, art. 473 - 474 (fructe și produse)];

11. Conținutul digital și bunul digital [5, art. 477];

12. Bunurile corporale și incorporale [5, art. 455];

13. Bunurile culturale mobile [5, art. 481]

14. Obiectele de proprietate intelectuală [5, art. 476].

**4.1. După regimul circulației juridice distingem:** *bunuri care se află în circuitul civil, bunuri care sunt supuse unui regim special de circulație și bunuri scoase din circuitul civil.* Conform art.457 CC RM, „*Bunurile pot circula liber, cu excepția cazurilor când circulația lor este limitată sau interzisă prin lege*”.

a) **Bunuri care se află în circuitul civil** – sunt cele care pot face obiectul actelor juridice civile. De regulă, bunurile sunt în circuitul civil. Deci, legea (și numai legea) trebuie să prevadă, în mod expres, excepțiile. Bunurile aflate în circuitul civil sunt toate bunurile alienabile, ce se pot urmări de creditori și se pot dobândi și pierde prin prescripție. Din categoria bunurilor aflate în circuitul civil fac parte bunurile de consum, bunurile de uz casnic, gospodăresc.

b) **Bunuri supuse unui regim special de circulație** – acele bunuri care deși se află în circuitul civil, totuși, au un regim special de circulație în ce privește circulația lor, cu alte cuvinte, circulația acestora este limitată. Bunurile care sunt limitate în circuitul civil pot fi dobândite, deținute, folosite și înstrăinate în anumite condiții prevăzute de lege. În principiu, restricțiile ce privesc circulația bunurilor se pot referi fie la subiecte de drept care pot dobândi și înstrăina aceste bunuri, fie la condițiile de încheiere a actelor juridice cu aceste bunuri. Așa de exemplu, conform prevederilor art.7 din Legea cu privire la arme [14], permisul de procurare a armelor letale și neletale supuse autorizării și, după caz, permisul de armă se acordă persoanelor prevăzute în art.8 alin.(1) dacă nu se află în una din situațiile specificate în alin. (2) din prezentul articol și întrunesc cumulativ următoarele condiții: au împlinit vârsta de 21 de ani; au absolvit un curs de instruire teoretică și practică de mânăuire a armei de foc, organizat de o persoană juridică acreditată în domeniu, în condițiile legii, cu excepția personalului atestat din cadrul autorităților administrației publice care au competențe în domeniul apărării naționale, securității statului și al ordinii publice; dispun de condiții pentru asigurarea securității și integrității armelor și a munițiilor; sunt apte din punct de vedere psihologic și medical pentru a deține și a folosi arme și muniții; au calitatea impusă de lege, atestată prin documente prevăzute în normele de aplicare a prezentei legi, în funcție de destinația armelor.

La fel, au o circulație limitată monumentele, adică bunurile ce fac parte din patrimoniul cultural, în conformitate cu Legea 1530/1993, materialele explozive, produsele și substanțele toxice, obiectele de cult etc.

c) **Bunuri scoase din circuitul civil** – acele bunuri care nu pot face obiectul actelor juridice. Bunurile scoase din circuitul civil sunt inalienabile – nu pot fi înstrăinate. Sunt scoase din circuitul civil lucrurile care:

- prin natura lor, nu sunt susceptibile de apropiere, sub forma dreptului de proprietate sau a altor drepturi reale, cum ar fi: aerul, apele curgătoare, spațiul cosmic;
- bunurile domeniului public în conformitate cu prevederile art.471;
- alte categorii de bunuri care prin lege sunt scoase din circuitul civil.

Importanța acestei clasificări se manifestă în ceea ce privește valabilitatea actelor juridice civile sub aspectul obiectului lor. Astfel, nerespectarea prevederilor legale care supun unor condiții actele juridice privitoare la anumite bunuri atrage, pe lângă nulitatea respectivelor acte, și răspunderea contravențională sau penală [15, p. 45].

De exemplu, art. 290 din Codul penal [12] stabilește sancțiune penală pentru purtarea, păstrarea, procurarea, fabricarea, repararea sau comercializarea armelor de foc, precum și sustragerea lor, cu excepția armei de vânătoare cu țevă lisă, sau a munițiilor fără autorizația corespunzătoare. Astfel, *se pedepsește cu amendă în mărime de la 650 la 950*



unități convenționale sau cu muncă neremunerată în folosul comunității de la 180 la 240 de ore, sau cu închisoare de până la 3 ani. Aceleași acțiuni săvârșite de două sau mai multe persoane se pedepsesc cu închisoare de la 2 la 7 ani.

Art. 360 al Codului Contravențional [16] stabilește sancțiune contravențională pentru încălcarea modului de comercializare și/sau de înstrăinare a armelor letale sau neletale și/sau a munițiilor aferente. Astfel, *comercializarea armelor letale sau neletale și/sau a munițiilor aferente persoanelor care nu sunt autorizate în modul stabilit de legislația în vigoare se sancționează cu amendă de la 240 la 300 de unități convenționale aplicată persoanei juridice cu privarea de dreptul de a desfășura o astfel de activitate pe un termen de la 3 luni la un an. Iar încălcarea modului de înstrăinare a armelor letale sau neletale supuse autorizării și/sau a munițiilor aferente sau transmiterea acestora unei persoane neautorizate în modul stabilit de legislația în vigoare se sancționează cu amendă de la 30 la 60 de unități convenționale cu privarea de dreptul de deținere sau port și folosire a armei pe un termen de la 2 ani la 5 ani.*

**4.2. În funcție de natura bunurilor și calificarea dată de lege, distingem: bunuri mobile și bunuri imobile.**

a) **Bunurile imobile.** Potrivit Dicționarului explicativ al limbii române, „*bunurile imobile reprezintă lucruri care au o așezare fixă, stabilă și care, așadar, nu pot fi mutate dintr-un loc în altul, fără să-și piardă destinația inițială sau identitatea*” [17].

Codul Civil al Republicii Moldova nu conține definiția de „bunuri imobile”, însă art. 459 alin. (2) prevede: „*Bun imobil se consideră terenul înregistrat în Registrul bunurilor imobile sub număr cadastral distinct*”. Modificările operate la Codul civil au drept obiectiv revenirea la sistemul tradițional de a reglementa regimul bunurilor imobile, și anume, se revine la principiul că tot ce se află pe teren face parte din teren (*superficies solo cedit*) [18, p. 17]. În acest sens, se introduce regula că bun imobil se consideră terenul, iar construcțiile, lucrările, drumurile, alte amenajări de pe el fac parte componentă din teren (aceste reglementări se regăsesc în codurile civile europene). Astfel, proprietarul terenului cu construcție nu poate vinde sau ipoteca construcția, dar păstra terenul.

Art. 459 alin. (3) CC RM prevede: „*Rămân bunuri imobile materialele separate în mod provizoriu de un teren, pentru a fi reîntrebuințate, atât timp cât sunt păstrate în aceeași formă, precum și părțile integrante ale unui bun imobil care sunt detașate provizoriu de acesta dacă sunt destinate reamplasării. Materialele aduse pentru a fi întrebuințate în locul celor vechi devin bunuri imobile*”.

Astfel, materialele separate în mod provizoriu de un teren atât timp cât sunt păstrate în aceeași formă, cum ar fi de exemplu cărămizile din ziduri cu condiția că acestea să fie reîntrebuințate în aceeași construcție și părțile integrante ale unui bun imobil care sunt detașate provizoriu de acesta dacă sunt destinate reamplasării, de exemplu unele elemente ale construcțiilor care sunt separate pentru a fi întrebuințate în altă construcție. În cazul în care materialele vechi sunt înlocuite cu altele noi, atunci acestea preiau locul celor vechi și deci devin bunuri mobile. Această calificare dată unor bunuri este o ficțiune legală necesară pentru a supune bunurile aceluiași reguli ca și pentru imobilul la care sunt atașate [19, p. 336].

Constituie parte componentă a bunului imobil lucrurile și lucrările atașate permanent la teren, precum clădirile, construcțiile subterane (chiar dacă se extind asupra altor terenuri), obiectele acvatice separate, plantațiile prinse de rădăcini, roada neculeasă.

Această regulă se aplică indiferent dacă aceste părți componente sunt sau nu sunt înregistrate în Registrul bunurilor imobile în mod separat [5, art. 460, alin. (1)].

Totodată, nu constituie parte componentă a bunului imobil:

– clădirile și alte lucruri și lucrări atașate permanent la teren, care sunt construite pe terenul altuia pe baza unui drept de suprafață, precum și lucrurile atașate la teren pentru un scop temporar [5, art. 460, alin. (2)];

– rețelele de utilitate sau lucrările de utilitate amplasate pe bunul imobil care au fost construite de către un terț pe baza unui drept de suprafață sau în privința cărora proprietarul bunului imobil îi incumbă obligația legală de a le tolera [5, art. 460, alin. (3)].

Clădirile și alte lucruri și lucrări atașate permanent la teren care rămân pe teren la stingerea dreptului de suprafață devin parte componentă a terenului [5, art. 460, alin. (5)].

Constituie parte componentă a clădirii lucrurile și lucrările din care clădirea este construită sau care sunt atașate ei în mod permanent și care nu pot fi separate fără a deteriora în mod substanțial clădirea sau lucrul ori lucrarea supusă separării [5, art. 461, alin. (1)].

Lucrul sau lucrarea atașată la o clădire pentru un scop temporar nu este parte a acelei clădiri [5, art. 461, alin. (2)].

Constituie bun imobil unitatea în condominiu împreună cu cota-parte corespunzătoare din dreptul de proprietate sau de suprafață asupra terenului, părților din clădire altele decât unitățile și altor părți comune ale condominiului [5, art. 462, alin. (1)].

Unitatea și cota-parte corespunzătoare din dreptul asupra părților comune nu pot fi înstrăinate sau grevate decât împreună [5, art. 460, alin. (2)].

Proprietatea terenului se întinde și asupra subsolului și a spațiului de deasupra terenului, cu respectarea limitelor legale [5, art. 463, alin. (1)].

În condițiile legii, proprietarul poate face, deasupra și în subsolul terenului, toate construcțiile, plantațiile și lucrările pe care le găsește de cuviință și poate trage din ele toate foloasele pe care acestea le-ar produce. El este ținut să respecte, în condițiile și în limitele determinate de lege, drepturile terților asupra resurselor minerale ale subsolului, izvoarelor și apelor subterane, lucrărilor și instalațiilor subterane și altora asemenea [5, art. 463, alin. (2)].

Apele de suprafață și albiile acestora aparțin proprietarului terenului pe care se formează sau curg, în condițiile prevăzute de lege. Proprietarul unui teren are, de asemenea, dreptul de a apropria și de a utiliza, în condițiile legii, apa izvoarelor și a lacurilor aflate pe terenul respectiv, apa freatică, precum și apele pluviale [4, art. 463, alin. (3)].

Conform art. 464 CC RM nou, „Prevederile referitoare la bunurile imobile și mobile se aplică în modul corespunzător și drepturilor reale asupra acestor bunuri”. Bunurile imobile, grevările acestor drepturi, apariția, modificarea și încetarea lor sunt supuse înregistrării de stat. Cadastrul bunurilor imobile asigură recunoașterea publică a dreptului de proprietate și a altor drepturi patrimoniale asupra bunurilor imobile, cât și ocrotirea de stat a acestor drepturi. Drepturile reale asupra bunurilor imobile vor lua naștere doar în cazul în care vor fi înregistrate în Registrul bunurilor imobile. Aceeași regulă va fi aplicabilă și în cazurile de modificare și încetare a acestor drepturi. Drept consecință, drepturile reale asupra bunurilor reale vor fi opozabile terților doar dacă au fost înregistrate în Registrul bunurilor imobile. Organul care efectuează înregistrarea este obligat să elibereze, în termen de 3 zile, oricărei persoanei fizice care s-a legitimat și a depus a cerere scrisă sau persoanei juridice care l-a

sesizat oficial informațiile solicitate despre toate drepturile înregistrate asupra oricărui bun imobil [5, art. 464].

Totodată, prin lege, la categoria de bunuri imobile pot fi raportate și alte bunuri [5, art. 459 alin. (4)]. Codul civil, prin prevederea din acest articol, admite posibilitatea răsfrângerii regimului juridic al bunurilor imobile și asupra altor categorii de bunuri, dar cu condiția ca acest lucru să fie expres prevăzut de lege.

Codul funciar al RM, în art. 2<sup>1</sup> stipulează că constituie bunuri imobile: „sectoarele de teren și obiectele aferente acestora (solul, bazinele de apă închise, pădurile, plantațiile multianuale, clădirile, construcțiile, edificiile etc.), strămutarea cărora este imposibilă fără a cauza pierderi directe destinației lor” [20, art. 2, alin. (1)].

Legea cadastrului bunurilor imobile [21] nu diferențiază bunurile imobile de cele mobile, însă în art.4 se enumeră obiectele înregistrării în cadastru. Astfel, la categoria bunurilor imobile ca obiect al înregistrării sunt atribuite: terenurile; clădirile și construcțiile legate solid de pământ; apartamentele și alte încăperi izolate. De asemenea, în Registrul bunurilor imobile pot fi înregistrate locurile de parcare din clădire, delimitate în conformitate cu instrucțiunile pentru executarea lucrărilor cadastrale, porțiunile de subsol, obiectivele acvatic separate, precum și plantațiile prinse de rădăcini (plantațiile perene) înființate în conformitate cu normele stabilite de legislație.

Legea cu privire la formarea bunurilor imobile [22], în articolul 8 enumeră bunurile imobile care pot/nu pot fi formate ca obiect independent de drept. Astfel, pot fi formate ca obiect independent de drept:

- a) terenurile cu sau fără construcții;
- b) construcțiile, inclusiv cele nefinalizate;
- c) apartamentele;
- d) încăperile izolate, dacă sunt respectate condițiile art. 7 al legii.

Totodată, nu pot fi formate ca obiect independent de drept:

- a) încăperile din apartamente sau case individuale care nu corespund condițiilor prevăzute de art. 7 al legii;
- b) construcțiile auxiliare ale căror funcții sunt legate direct de construcția principală;
- c) instalațiile ingineresti;
- d) anexele de deservire a gospodăriei, dacă este imposibilă specificarea dependenței lor funcționale sau dacă folosirea lor nu este definită;
- e) gardurile, pereții, bornele de hotar, alte instalații ale căror funcții sunt legate direct de teren sau de construcția principală.

Observăm că o astfel de clasificare în legislația RM este întâlnită pentru prima dată.

Codul fiscal al RM [23], în art. 276, pct. 2, dă următoarea definiție a „bunurilor imobiliare” – *terenurile, clădirile, construcțiile, apartamentele și alte încăperi izolate, a căror strămutare este imposibilă fără cauzarea de prejudicii destinației lor.*

**b) Bunuri mobile.** Art. 459 alin. (5) CC RM nou: „Bunurile care nu sunt raportate la categoria de bunuri imobile, inclusiv banii, valorile mobiliare și alte titluri de valoare, sunt considerate bunuri mobile”.

Importanța clasificării bunurilor în mobile sau imobile constă în stabilirea regimului juridic al bunurilor imobile și al celor mobile, care este diferit [24]. Astfel, în dreptul civil:

– în ceea ce privește înstrăinarea lor, formele de publicitate se aplică în principal actelor juridice, având ca obiect bunuri imobile; la înstrăinarea bunurilor imobile se cere respectarea formei autentice [5, art. 323];

- în ceea ce privește garanțiile reale, bunurile mobile pot forma obiectul unui gaj sau al unei garanții reale mobiliare, iar bunurile imobile pot forma obiectul unei ipoteci;
- în ceea ce privește prescripția extinctivă, acțiunea în revendicare se prescrie diferit după cum privește un bun mobil sau imobil;
- în cazul bunurilor imobile, dreptul de proprietate se dobândește la data înscrierii în Registrul bunurilor imobile, cu excepțiile prevăzute de lege;
- renunțarea la dreptul de proprietate asupra bunurilor imobile se face printr-o declarație autentificată notarial și înscrisă în Registrul bunurilor imobile;
- pentru actele de dispoziție asupra bunurilor imobile proprietate comună în devălmășie este necesar acordul scris al tuturor coproprietarilor devălmași;
- dacă bunurile succesoriale se află în diferite locuri, cel al deschiderii succesiunii va fi considerat locul unde se află partea cea mai valoroasă a bunurilor imobile;
- bunurile imobile se bucură de o protecție legală mai puternică; unele bunuri mobile (nave, aeronave, fondul de comerț etc.) au un regim juridic asemănător imobilelor [25];
- bunurile imobile proprietate comună a soților pot fi înstrăinate numai cu consimțământul expres al ambilor soți, în timp ce în cazul înstrăinării bunurilor mobile funcționează regula mandatului tacit reciproc între soți.
- o condiție importantă la înstrăinarea bunurilor imobile este capacitatea deplină de exercițiu a înstrăinătorului;
- acțiunea în materie imobiliară este de competența instanței locului situării bunului, în timp ce în materie mobilă competența este a instanței domiciliului părâtului;
- în dreptul internațional privat, legea aplicabilă în materie imobiliară este legea statului în care se găsesc bunurile (*lex rei sitae*), iar în materie mobilă, în privința anumitor categorii de bunuri (nave, aeronave) se aplică legea statului sub al cărui pavilion navighează, iar mărfurile în tranzit sunt supuse legii locului de expediție;
- înstrăinarea anumitor bunuri imobile este supusă, uneori, unor cerințe mai riguroase (terenul agricol nu poate fi înstrăinat decât unui cetățean al RM);
- executarea silită este supusă unor reguli diferite, după cum se urmărește un bun mobil sau imobil;
- în situația unirii unui bun imobil cu un bun mobil, bunul imobil este considerat bunul principal.

Importanța aceste clasificări rezultă din regimul juridic aplicat în mod diferit la bunurile mobile și imobile. Ca exemplu:

a) *Regimul înstrăinării bunurilor.* Pentru bunurile imobile, pentru actele de înstrăinare legiuitorul stabilește forma scrisă și autentificată notarial, pentru bunurile mobile - nu este stabilit același lucru în legislație, astfel părțile determină de comun acord forma contractului.

b) *Dovada proprietății.* Dacă vorbim de bunul mobil, atunci acesta se prezumă că aparține posesorului bunului, adică legea nu cere niște condiții de opozabilitate. Referitor la bunul imobil, dovada proprietății se face doar prin acte doveditoare.

c) *Momentul transmiterii dreptului de proprietate.* Dreptul de proprietate asupra unui bun mobil se consideră dobândit din momentul din care dobânditorul a intrat în posesia asupra bunului. Pentru bunurile imobile, momentul dobândirii dreptului de proprietate este raportat la momentul înscrierii dreptului în registrul bunurilor imobile

(excepții, ca ex. moștenirea, unde dreptul de proprietate se dobândește la momentul deschiderii moștenirii etc).

d) *Exercitarea drepturilor comune.* Dacă ne referim la bunul mobil ce se află în proprietatea comună în devălmășie, în cazul când unul dintre soți dorește să dispună de acest bun, o face doar cu acordul expres al celuilalt soț. În cazul înstrăinării bunului mobil, în cadrul proprietății comune în devălmășie, nu este necesar acest acord expres, ca la bunurile imobile, fiindcă acordul se prezumă.

**4.3. După cum pot fi sau nu împărțite fără să își schimbe destinația,** bunurile se clasifică în *divizibile și indivizibile*.

a) **Bunul divizibil** este cel care poate fi partajat în natură fără a i se schimba destinația economică [5, art. 466 alin. (1)]. De exemplu, o cantitate de 100 l vin poate fi așezată în butoaie de diferite mărimi; un cupon de stofă măsurând 100 m poate fi împărțit în cupoane mai mici etc.). Divizibilitatea rezultă din natura lucrului [25, p. 113].

Urmează să precizăm că divizibilitatea bunurilor trebuie să fie privită sub două aspecte: sub aspect fizic și sub aspect juridic. Sub aspect fizic sunt divizibile numai bunurile corporale, dat fiind faptul că materia în sine este întotdeauna divizibilă. Divizibilitatea fizică presupune existența a trei condiții:

- părțile din care era compus bunul să posede calitățile individuale ale întregului;
- Părțile, în urma diviziunii, să rămână proprii pentru destinația economică pe care o avea întregul;
- părțile să nu sufere o depreciere valorică disproporționată [1, p. 250].

b) **Bunul indivizibil** este cel care nu poate fi împărțit în mai multe fragmente, părți, bucăți etc., fără a i se schimba destinația (de ex.: o haină, o mașină de scris, un calculator, un tablou, un animal viu etc.). Este indivizibil bunul ale cărui părți, în urma divizării, pierd calitățile și destinația lui [5, art. 466 alin. (2)].

Indivizibilitatea unui lucru rezultă din natura lui. Pentru aplicarea acestei clasificări se poate utiliza atât un criteriu obiectiv (însușirile naturale ale lucrului), cât și un criteriu subiectiv fondat pe voința părților exprimată în actul încheiat.

Prin act juridic, un bun divizibil poate fi considerat indivizibil [5, art. 466 alin. (3)].

Această clasificare are importanță în materia partajului și a obligațiilor cu pluralitate de subiecte.

Astfel, în cazul partajului, întrucât bunul indivizibil nu poate fi fracționat, el va fi atribuit unuia dintre copărtași sau va fi scos în vânzare prin licitație, iar prețul obținut va fi împărțit între copărtași.

De asemenea, bunul indivizibil care formează obiectul unei obligații cu mai multe subiecte determină o indivizibilitate naturală, așa încât, după caz, fiecare creditor poate cere întreaga prestație sau fiecare debitor este ținut să execute întreaga prestație [26, p. 84].

**4.4. În funcție de corelația dintre ele,** bunurile se clasifică în *principale și accesorii*.

a) **Bunuri principale** sunt acele bunuri care au o existență de sine stătătoare, o destinație economică proprie, adică pot fi folosite independent, fără a servi la întrebuințarea unui alt bun [2, p. 338]. Toate celelalte bunuri sunt principale [5, art. 467 alin. (1)].

b) **Bunuri accesorii.** Bunul destinat în mod permanent întrebuințării economice unui alt bun (principal) și legat de acesta prin destinație comună este un bun accesoriu atât timp, cât satisface această întrebuințare [5, art. 467 alin. (1)].

Bunurile accesorii sunt acele bunuri care sunt destinate să servească la întrebuințarea altor bunuri principale [19, p. 338]. Ca exemple de bunuri accesorii, cităm: cheia pentru lacăt, cureaua pentru ceas, coperta pentru caiet, antena de la televizor, arcușul de la vioară, bețele pentru ski etc. Codul civil, în art.467 alin.(1) CC RM atribuie două caractere bunurilor accesorii, și anume:

- existența unei legături economice între bunul accesoriu și principal;
- bunul accesoriu trebuie să fie destinat în mod permanent întrebuințării economice a bunului principal.

Starea de accesoriu poate rezulta din raportul juridic care se află în dependență față de altul, ca de exemplu în cazul raportului de garanție (dreptul de gaj) sau din natura lucrurilor.

Conform art. 467 alin. (2)CC RM, „*destinația comună poate fi stabilită numai de proprietarul ambelor bunuri dacă în contract nu este prevăzut altfel*”.

Pentru a fi în prezența bunurilor principale și accesorii trebuie ca ambele aceste bunuri să fie în proprietatea uneia și aceleiași persoane. Aceasta înseamnă că bunul principal și bunul accesoriu trebuie să aibă același proprietar [19, p. 338].

Pentru a stabili dacă un bun este accesoriu sau principal urmează a fi îndeplinite următoarele condiții:

- ambele bunuri să fie în proprietatea aceluiași proprietar;
- titularul dreptului de proprietate trebuie să stabilească prin voința lui un raport cu destinația comună a ambelor bunuri.

Această regulă are caracter dispozitiv, admitând posibilitatea ca părțile unui contract prin voința lor să deroge de la ea.

*Bunul accesoriu urmează situația juridică a bunului principal dacă părțile nu convin altfel* [5, art. 467 alin.(3)]. Ca urmare, dacă bunul principal va fi înstrăinat (vândut, schimbat, donat), această soartă o va avea și bunul accesoriu, fiind și el considerat înstrăinat. În situația de accesoriu se află toate raporturile de garanție personală (fidejusiunea) și reale (gajul).

*Încetarea calității de bun accesoriu nu este opozabilă unuiterț care a dobândit anterior drepturi privitoare la bunul principal* [5, art. 467 alin. (4)]. E o precizare alin.(3), conform căruia bunul accesoriu urmează situația juridică a bunului principal.

*Separarea temporară a unui bun accesoriu de bunul principal nu-i înlătură această calitate* [5, art. 467 alin. (5)]. Dacă un bun accesoriu temporar este separat de la bunul principal, cu condiția că ulterior își va lua locul de bun accesoriu a aceluiași bun principal, apoi el va rămâne a fi considerat că bun accesoriu respectiv fiindu-i aplicabile regulile respective.

Această clasificare prezintă interes în dreptul civil, deoarece bunul accesoriu urmează soarta juridică a bunului principal, dacă nu reiese altfel din lege sau din convenția părților. Astfel, vânzarea unui instrument muzical implică obligația vânzătorului de a preda cumpărătorului și cutia care este bun accesoriu, dacă părțile nu au convenit altfel [15, p. 45].

**4.5. După felul cum pot fi sau nu înlocuite bunurile în executarea unei obligații,** art.468 din CC distinge între *bunurile fungibile* și *bunurile nefungibile*.

a) **Bunurile fungibile** sunt bunurile care, în executarea unei obligații, pot fi înlocuite cu altele fără a afecta valabilitatea plății. Toate celelalte bunuri sunt nefungibile [5, art.468

alin. (1)]. Bunurile fungibile sunt bunuri determinate după număr, măsură sau greutate, ceea ce permite să fie înlocuite unele prin altele în executarea unei obligații. Ca regulă generală sunt fungibile bunurile de gen, adică acele bunuri care sunt determinabile prin numărare, măsurare, cântărire, determinare volumetrică și sunt nefungibile bunurile certe [27].

b) **Bunurile nefungibile** sunt acelea care nu pot fi înlocuite cu altele în executarea unei obligații, așa încât debitorul nu este liberat decât prin predarea bunului datorat [3, p. 79].

Fungibilitatea ori nefungibilitatea bunului este determinată de faptul dacă un bun poate fi înlocuit cu altul în cadrul executării unei obligațiuni. De exemplu: 100 kg de grâu pot fi înlocuite cu 100 kg de grâu de aceeași calitate. Bunurile fungibile sunt acelea care pot fi înlocuite unele cu altele în executarea unei obligații. În schimb, bunurile nefungibile sunt acelea care nu se pot înlocui unele cu altele în executarea unei obligații, astfel că debitorul se va considera că a executat obligația doar în cazul în care a transmis bunul datorat [19, p. 339]. De exemplu, în categoria bunurilor fungibile putem enumera așa bunuri ca: banii, alimentele de un anumit fel, mese, scaune, pixuri, caiete etc., iar la categoria bunurilor nefungibile așa bunuri ca: o casă, un lot de pământ, un câine de rasă etc. Natura juridică a bunurilor fungibile presupune că ambele bunuri (care pot fi înlocuite în exercitarea unei obligații) au aceeași valoare pentru creditor din punct de vedere al plății datorate, așa încât creditorului îi este indiferent care anume bun va primi.

Conform art.468 alin.(2) CC RM, „*prin act juridic, un bun fungibil poate fi considerat nefungibil, iar un bun nefungibil poate fi considerat fungibil. Astfel, părțile unui act juridic pot prin voința lor să considere un bun fungibil ori nefungibil. Totuși, privitor la unele bunuri cum sunt banii, cerealele sau altele vor fi considerate aproape întotdeauna fungibile. Fungibilitatea monedei este și o necesitate practică, fiindcă de regulă este imposibil să întorci aceleași bancnote pe care le-ai primit ori să întorci aceeași materie primită*” [19, p. 339].

Clasificarea făcută de text este prescrisă după criteriul posibilității bunurilor de a fi înlocuite unele cu altele în executarea unei obligații. Această clasificare prezintă importanță în aprecierea valabilității plății și determinarea momentului transmiterii (constituirii) dreptului real în actele juridice între vii translativ (constitutive) de drepturi reale [26, p. 79].

**4.6. După caracterul modului de determinare,** distingem între bunuri certe, determinate individual (*res certa*) și bunuri determinate generic (*res genera*).

Se consideră **determinat individual** bunul care, potrivit naturii sale, se individualizează prin semne, însușiri caracteristice doar lui [5, art. 469 alin. (1)]. Astfel, bunul este determinat individual dacă se individualizează prin însușirile proprii caracteristice doar lor (un tablou unic pictat de Picasso (Pablo Ruisy Picasso) – „Domnișoarele din Avignon”, o casă de locuit, un lot de teren). Deci, aceste bunuri se deosebesc de alte bunuri asemănătoare prin însușirile lor specifice, care le fac în principiu unice [19, p. 339].

La fel, la această categorie se referă și cele care se individualizează prin anticipație sau prin determinarea legii. Astfel, atribuim bunurile care care, deși pot fi determinate generic, dar care prin convenirea părților la raport sau prin lege devin determinate individual. Ca exemplu: autoturismele care de fapt sunt bunuri determinate generic, însă legiuitorul impune atribuirea unor numere de înmatriculare (numere individuale), urmare la care acestea devin bunuri determinate individual [28, p. 123].

a) **Bunul determinat generic** se consideră „bunul care posedă semnele caracteristice tuturor bunurilor de același gen și care se individualizează prin numărare, măsurare, cântărire. Bunul determinat generic este fungibil” [5, art. 469 alin. (2)].

Acel bun care se determină prin caracterele comune bunurilor de gen și care se individualizează prin numărare (10 mese, 5 saune, 30 cărți, 20 telefoane), măsurare (20 metri de stofă, 8 m de cablu electric), cântărire (5 kg de roșii, 1 tonă de mere). Deși, după regula generală, bunurile determinate generic sunt considerate fungibile, totuși, trebuie să ținem cont de faptul că între aceste două categorii de bunuri nu întotdeauna există o perfectă identitate. Așa de exemplu o carte este un bun generic și totodată fungibil, adică poate fi înlocuită în executarea unei obligații cu o altă carte scrisă de același autor cu același conținut. Însă pot exista cazuri când împrumutătorul va insista să fie întoarsă anume cartea împrumutată care poartă semnătura autorului (de exemplu prezentul Cod civil adnotat cu semnăturile tuturor autorilor comentariului) și în aceste cazuri nu va mai fi vorba de un bun generic și fungibil, ci de un bun determinat care îl deosebește de alte bunuri din această categorie [19, p. 339].

Totodată, prin act juridic, „bunurile determinate individual pot fi considerate determinate generic, iar bunurile determinate generic pot fi considerate determinate individual” [5, art. 469 alin. (3)].

Dacă însă bunul este generic, determinat numai prin caractere generice, atunci dreptul de proprietate se transmite la dobânditor după încheierea contractului, și anume, de regulă la predarea bunului când se va proceda la individualizarea acestuia prin numărare, măsurare ori cântărire. Fără individualizare nu se poate opera transmiterea dreptului de proprietate, căci până atunci bunul vândut se confundă cu masa celorlalte bunuri identice ale proprietarului.

Importanța aceste clasificări rezultă din modalitatea executării obligației în ce privește aceste bunuri, așa cum și din situațiile de legate de pierirea fortuită a bunului. Astfel, la pierirea fortuită a bunurilor determinate individual, debitorul nu poate fi obligat să transmită bunul. Acesta va fi obligat să compenseze valoarea acestui bun, pe când la pierirea fortuită a bunurilor determinate generic, debitorul este obligat să pună la dispoziție creditorului un bun de același gen [28, p. 124].

**4.7. După cum folosirea bunurilor implică sau nu consumarea substanței ori înstrăinarea lor,** bunurile pot fi *consumptibile* sau *neconsumptibile*.

a) **Bunurile consumptibile** sunt acele bunuri a căror întrebuințare obișnuită implică înstrăinarea sau consumarea substanței lor [5, art. 470 alin. (1)]. Folosirea acestor bunuri nu se poate realiza decât consumându-se fie material, fie juridic prin înstrăinarea și ieșirea lor din patrimoniu, într-un singur act de folosire. Includem în această categorie de bunuri produsele alimentare, materia primă, grânele, banii – acestea îndeplinindu-și funcțiile sale prin înstrăinare. Bunurile consumptibile nu trebuie confundate cu bunurile comestibile, corelația dintre acestea fiind de gen – specie. Toate bunurile comestibile sunt și bunuri consumptibile, însă nu toate bunurile consumptibile sunt și bunuri comestibile (benzina, motorina sunt bunuri consumptibile, dar nu și bunuri comestibile).

b) **Bunurile neconsumptibile** sunt acele care pot fi întrebuințate în mod continuu fără a li se consuma substanța lor sau să fie implicată înstrăinarea. Fac parte din această categorie așa bunuri ca terenurile, construcțiile, automobilele etc.



Prin act juridic, un bun consumptibil poate fi considerat neconsumptibil [5, art. 470 alin. (2)]. Astfel, pentru o librărie cărțile sunt bunuri consumptibile, căci aceasta nu le poate folosi decât înstrăinându-le, deși prin natura lor ele sunt neconsumptibile. De asemenea, alimentele expuse în vitrină, în scop de reclamă, deși consumptibile prin natura lor, devin - prin această utilizare - neconsumptibile. fiind susceptibile de o întrebuițare prelungită în timp [29, p. 68].

Clasificarea bunurilor în consumptibile și neconsumptibile prezintă interes în materie de uzufruct și împrumut. Astfel, uzufructul implică pentru uzufructuar dreptul de a se folosi de un bun fără a-i consuma substanța, cu obligația de a-l restitui proprietarului la încetarea uzufructului.

Constituirea unui drept de uzufruct poate, așadar, avea loc numai asupra unui bun neconsumptibil. În cazul în care se constituie un drept de uzufruct asupra unui bun consumptibil, uzufructuarul nu mai are obligația de a conserva substanța bunului, ci poate dispune de el, cu îndatorirea de a restitui proprietarului un bun de aceeași cantitate, calitate și valoare.

Bunurile consumptibile nu pot face obiectul unor acte juridice care implică îndatorirea de restituire a lucrului în individualitatea sa (cum sunt: comodatul, constituirea unui drept de uzufruct etc.), ci numai a actelor care îndreptățesc la consumarea lucrurilor, cu obligația restituirii altora de același fel (cum sunt: împrumutul (ulei, zahăr), constituirea unui cvasiuzufruct etc.) [1, p. 256].

**4.8. După calitatea titularului din al cărui patrimoniu fac parte,** deosebim: *bunuri ale domeniului public și bunuri ale domeniului privat.*

Codul civil consacră art. 471 acestor categorii de bunuri. Temeiul acestei clasificări a bunurilor îl constituie art. 9 din Constituție, care prevede că proprietatea este publică și privată. În art. 471 alin. (1) se instituie o regulă foarte importantă, și anume, statul și unitățile administrativ-teritoriale au în proprietate două categorii de bunuri cu regim diferit: bunuri ale domeniului public și bunuri ale domeniului privat. Această dispoziție legală instituie prezumția conform căreia bunul este considerat din domeniul privat dacă prin lege (și numai prin lege) nu este atribuit categoriei bunuri publice. Bunurile statului și cele ale unităților administrativ-teritoriale afectate domeniului privat pot circula liber, cu ele pot fi încheiate diferite acte juridice [7, p. 105].

a) Din **domeniul public al statului sau al unităților administrativ-teritoriale** fac parte bunurile determinate de lege, precum și bunurile care, prin natura lor, sunt de uz sau de interes public. Interesul public implică afectarea bunului la un serviciu public sau la orice activitate care satisface nevoile colectivității fără a presupune accesul nemijlocit al acesteia la utilizarea bunului conform destinației menționate [5, art. 471 alin. (2)]. Bunurile domeniului public sunt inalienabile, insesizabile și imprescriptibile. Dreptul de proprietate asupra acestor bunuri nu se stinge prin neuz și nu poate fi dobândit de terți prin uzucapiune.

Pentru ca bunul să fie afectat domeniului public este necesar ca prin lege să fie numite care anume bunuri sunt considerate bunuri publice, ori natura bunului să fie de uz public sau de interes public.

„Bogățiile de orice natură ale subsolului, spațiul aerian, apele și pădurile folosite în interes public, resursele naturale ale zonei economice și ale platoului continental, căile de

comunicație, precum și alte bunuri stabilite de lege, fac obiectul exclusiv al proprietății publice” [5, art. 471 alin.(3)].

Constituția RM, în art. 127, alin. (4) prevede: „Bogățiile de orice natură ale subsolului, spațiul aerian, apele și pădurile folosite în interes public, resursele naturale ale zonei economice și ale platoului continental, căile de comunicație, precum și alte bunuri stabilite de lege, fac obiectul exclusiv al proprietății publice”.

Astfel, conform prevederilor art. 56 Cod Funciar [20], *terenurile destinate ocrotirii naturii (terenurile rezervațiilor, parcurilor naționale, parcurilor dendrologice și zoologice, grădinilor botanice, braniștilor, monumentelor naturii, terenurile zonelor de protecție și zonelor sanitare) sunt prin exclusivitate proprietate a statului.*

Legea privind delimitarea proprietății publice [30], în art. 5 prevede regimul juridic al bunurilor domeniului public. Astfel, *bunurile domeniului public formează obiectul exclusiv al proprietății publice a statului sau a unităților administrativ-teritoriale și sunt inalienabile, insesizabile și imprescriptibile, circuitul civil al acestora fiind limitat în condițiile legii.*

Bunurilor domeniului public le sunt caracteristice următoarele [30, art. 5 alin. (2)]:

- nu pot fi înstrăinate sau depuse în capitalul social al unor persoane juridice;
- nu pot fi supuse urmăririi silite;
- nu pot fi incluse în masa debitoare în cazul insolvenței/falimentului persoanei juridice;
- nu pot fi obiectul unei garanții reale;
- nu pot fi dobândite de persoane fizice sau juridice prin uzucapiune.

A două categorii de bunuri care face parte din domeniul public sunt bunurile care, prin natura lor, sunt *de uz sau de interes public.*

*Bun de interes local* este bunul proprietate publică a unității administrativ-teritoriale din domeniul public, care servește cauzei de utilitate publică locală.

*Bun de interes național* – este bunul proprietate publică a statului din domeniul public, care servește cauzei de utilitate publică națională.

Sunt de uz public bunurile accesibile tuturor persoanelor, cum ar fi parcurile naturale, străzile, piețele etc. Sunt de interes public bunurile care deși nu pot fi folosite de orice persoană, au destinația de a fi folosite în cadrul unor activități care interesează pe toți membrii societății cum ar fi muzeele, teatrele, școlile etc.

**b) Bunuri ale domeniului privat** sunt bunurile care aparțin persoanelor fizice sau persoanelor juridice, inclusiv statului și unităților administrativ-teritoriale, și care sunt alienabile, prescriptibile și sesizabile [7, p. 105].

*Bunurile care aparțin statului sau unităților administrativ-teritoriale fac parte din domeniul privat dacă, prin lege sau în modul stabilit de lege, nu sunt trecute în domeniul public*[5, art. 471 alin. (1)].

Bunurile domeniului privat al statului și al unităților administrativ-teritoriale sunt alienabile, sesizabile și prescriptibile și pot fi obiectul oricărui act juridic civil conform procedurilor stabilite, cu excepția unor categorii de bunuri al căror circuit civil este limitat în mod expres prin lege [30, art. 6 alin. (1)].

Nu se permite transmiterea cu titlu gratuit către persoanele fizice sau persoanele juridice de drept privat a bunurilor domeniului privat al statului și al unității administrativ-teritoriale, cu excepția cazurilor în care aceste bunuri:

- se înstrăinează cu titlu gratuit persoanelor fizice pentru lichidarea consecințelor calamităților naturale printr-o hotărâre a Guvernului, în cazul bunurilor proprietate publică

a statului, sau prin decizia autorității deliberative a administrației publice locale, în cazul bunurilor proprietate publică a unității administrativ-teritoriale;

– reprezintă terenuri ce se atribuie persoanelor fizice pentru construcția de case individuale în condițiile prevăzute de lege;

– reprezintă bunuri destinate creării parcurilor industriale, conform prevederilor Legii nr. 182/2010 cu privire la parcurile industriale;

– sunt în folosința comună a membrilor condominiului.

Această clasificare a bunurilor prezintă importanță deosebită, întrucât numai bunurile din domeniul public (al statului sau al unităților administrativ-teritoriale) sunt inalienabile și, pe cale de consecință, insesizabile și imprescriptibile. De altfel, dreptul de proprietate asupra acestor bunuri nu se stinge prin neuz și nu poate fi dobândit de terți prin uzucapiune. În schimb, art. 6 alin. (1) a Legii privind delimitarea proprietății publice stabilește că „bunurile domeniului privat al statului și al unităților administrativ-teritoriale sunt alienabile, sesizabile și prescriptibile și pot fi obiectul oricărui act juridic civil conform procedurilor stabilite, cu excepția unor categorii de bunuri al căror circuit civil este limitat în mod expres prin lege”.

#### **4.9. Universalitatea de fapt**

Potrivit art. 472 alin. (1) CC RM „constituie o universalitate de fapt ansamblul bunurilor care aparțin aceleiași persoane și sunt privite ca un tot întreg prin voința acesteia sau prin lege”.

Universalitatea de fapt constituie o totalitate de lucruri corporale omogene care sunt considerate ca un tot întreg (o bibliotecă, o turmă, un set de veselă, un set de mobilă etc.). Valoarea economică a acestei universalități trebuie pusă în legătură cu reunirea elementelor constitutive. Un exemplu al unei universalități de fapt poate servi alin. (2) al art. 618 din Codul civil care prevede că „arborii care se scot din pepinieră fără degradarea acesteia nu fac parte din uzufruct decât cu obligația uzufructuarului de a se conforma dispozițiilor legale și uzanțelor locale în ceea ce privește înlocuirea lor”. Deci, pepiniera se consideră că o universalitate din care fac parte arbori tineri care se cresc pentru a fi vânduți sau transplantați. Utilitatea lor este dată de ansamblul pe care îl formează. Universalitățile de fapt sunt, în principiu, fracțiuni de patrimoniu și se deosebesc, în esență, de patrimoniu prin aceea că în sânul lor nu funcționează relația activ-pasiv. Cu toate acestea, universalitatea de fapt nu poate fi considerată identică cu patrimoniul. Importanța universalității de fapt constă în faptul că în caz de înstrăinare vânzare-cumpărare, sechestru, gaj, universalitatea va fi privită în bloc și nu separat pentru fiecare bun ce formează tot întregul – universalitatea [19, p. 341 - 342].

Bunurile care alcătuiesc universalitatea de fapt pot, împreună sau separat, să facă obiectul unor acte sau raporturi juridice distincte [5, art. 472 alin. (2)].

Universalitate de drept la fel constituie o pluralitate de bunuri, numai că în acest caz, în componența universalității de drept pot intra nu numai bunurile corporale, ci și incorporale, care privite împreună sunt considerate ca un tot întreg. Ca universalitate de drept este considerat patrimoniul.

**4.10. După cum sunt ori nu producătoare de alte bunuri, fără a li se consuma sau diminua substanța,** bunurile se împart în *frugifere* și *nefrugifere*.

a) **Bunurile frugifere** sunt acelea care, în mod periodic și fără consumarea substanței lor, dau naștere altor bunuri, numite fructe [26, p. 81].

b) **Bunurile nefrugifere** sunt acelea care nu au însușirea de a da naștere altor produse, în mod periodic și fără consumarea substanței lor.

Codul civil clasifică produsele bunurilor în fructe și produse.

*Fructele* reprezintă acele produse care derivă din folosirea unui bun, fără a diminua substanța acestuia.

*Productele* sunt produsele obținute dintr-un bun cu consumarea sau diminuarea substanței acestuia, precum copacii unei păduri, piatra dintr-o carieră și altele asemenea.

Pornind de la prevederile înscrise în art. 473 CC RM, vom distinge *trei categorii de fructe*:

– *fructe naturale*: sunt produsele directe și periodice ale unui bun, obținute fără intervenția omului, cum ar fi acelea pe care pământul le produce de la sine, producția și sporul animalelor [5, art. 473 alin. (3)];

– *fructe industriale*: sunt produsele directe și periodice ale unui bun, obținute ca rezultat al intervenției omului, cum ar fi recoltele de orice fel [5, art. 473 alin. (4)];

– *fructe civile* (numite și *venituri*): sunt veniturile rezultate din folosirea bunului de către o altă persoană în virtutea unui act juridic, precum sunt chiriile, arende, dobânzile, venitul rentelor și dividendele [5, art. 473 alin. (5)].

Distincția dintre cele trei categorii de fructe prezintă interes în ceea ce privește *modul lor de dobândire*, în sensul că fructele naturale și cele industriale se dobândesc prin culegere (percepere), la data separării de bunul care le-a produs [5, art. 474 alin. (2)], iar fructele civile se dobândesc zi cu zi (prin simpla scurgere a timpului) [5, art. 474 alin. (3)].

De exemplu, în materia dreptului de uzufruct, fructele neculese în momentul deschiderii dreptului la uzufruct sunt ale uzufructuarului, iar cele neculese la sfârșitul perioadei de uzufruct sunt ale nudului proprietar dacă actul prin care s-a instituit uzufructul nu prevede altfel. Veniturile se consideră percepute zi cu zi și se cuvin uzufructuarului proporțional duratei uzufructului său. Aceste prevederi sunt aplicabile arenzii, chiriei imobilelor, dividendelor și dobânzilor obținute [5, art. 612 alin. (2)].

Distincția dintre fructe și produse are importanță practică sub mai multe aspecte, de exemplu: uzufructuarul are dreptul numai la fructe, nu și la produse, care se cuvin nudului proprietar (art. 618-619 CC); posesorul de bună-credință dobândește numai fructele (art. 497 CC RM), nu însă și produsele.

Importanța acestei clasificări rezultă din următoarele:

- modul de dobândire a lor este diferit. Fructele naturale și industriale se dobândesc prin culegere, fructele civile se dobândesc zi de zi, iar produsele se dobândesc prin separarea lor.
- în materie de uzufruct, de regulă fructele se culeg sau percep de uzufructuar, iar produsele de către nudul proprietar.
- în materia efectelor posesiunii posesorul de bună-credință dobândește fructele, iar produsele aparțin nudului proprietar.

#### **4.11. Conținutul digital și bunul digital**

Reforma Codului civil, în vigoare din 1 martie 2019, introduce conceptul de conținut digital și bun digital prin articolul 477 al Codului civil. Observăm că articolul 455 Cod civil nu este supus la careva modificări și, tradițional, conceptul de bun rămâne să cuprindă lucrurile și drepturile patrimoniale. Așadar, un bun întotdeauna are context patrimonial, fie materializat prin lucru sau sub forma unui drept real sau de creație. Acest context trezește interes față de calificarea juridică a bunului digital în raport cu noțiunea clasică a bunului și

impactul juridic pe care noua instituție a bunului digital îl poate avea la exercitarea drepturilor civile [31].

Potrivit art. 477 alin. (1) CC RM, „conținut digital se consideră datele produse și livrate în formă digitală, cum sunt programele de calculator, aplicațiile, jocurile, muzica, înregistrările video sau textele, indiferent dacă sunt accesate prin descărcare sau prin flux continuu, de pe un suport material sau prin orice alte mijloace”.

Dacă un conținut digital este livrat pe un suport material, cum sunt CD-urile sau DVD-urile, lui i se aplică dispozițiile privind bunurile corporale.

Conform textului art. 477 alin. (3) CC, condițiile de existență a unui bun digital sunt următoarele [31]:

- existența unui conținut digital sau a unui cont la o poștă electronică, la o rețea sau alt cont online;
- persoana are dreptul la acel conținut digital sau la poșta electronică, la rețeaua sau alt cont online.

Custodele bunului digital este profesionistul care oferă acces, menține, procesează, primește sau păstrează bunul digital al unei alte persoane (utilizator), conform contractului dintre custode și utilizator [5, art. 477 alin. (4)].

Utilizatorul poate folosi serviciul electronic oferit de custodele bunului digital pentru a ordona custodelui să ofere acces sau să nu ofere acces la toate sau anumite bunuri digitale, inclusiv la conținutul comunicărilor electronice. Dacă serviciul respectiv oferit de custode permite utilizatorului să modifice sau să revoce un ordin în orice moment, ordinul privind oferirea accesului are prioritate față de voința exprimată de utilizator într-un testament sau într-un mandat [5, art. 478 alin. (1)].

Dacă utilizatorul nu a folosit serviciul prevăzut de alin.(1) sau dacă custodele nu oferă un asemenea serviciu, utilizatorul poate permite sau interzice, printr-un testament sau mandat, accesul anumitor persoane determinate sau determinabile la toate sau anumite bunuri digitale [5, art. 478 alin. (2)].

Ordinul dat de utilizator are prioritate față de condițiile contractului dintre custode și utilizator. În absența unui ordin al utilizatorului, se aplică condițiile contractului dintre custode și utilizator, care pot permite, limita sau exclude accesul terților interesați de bunurile digitale ale utilizatorului.

În cazul în care în privința utilizatorului a fost instituită o măsură de ocrotire judiciară, iar ocrotitorul provizoriu, curatorul sau tutorele nu are acces la bunurile digitale ale persoanei ocrotite, el poate cere de la instanța de judecată să-i fie acordat dreptul la acces dacă are un interes legitim în acest sens și dacă aceasta nu contravine dorințelor și sentimentelor exprimate în trecut și prezent de către persoana ocrotită. În aceleași condiții, instanța de judecată poate acorda dreptul la acces prin hotărârea judecătorească prin care se instituie măsura de ocrotire judiciară [5, art. 478 alin. (4)].

Custodele care trebuie să ofere acces la bunurile digitale, îl poate oferi prin următoarele [5, art. 478 alin. (5)]:

- A) acces deplin la contul online;
- B) acces parțial la contul online, dar suficient pentru a respecta împuternicirile persoanei îndreptățite;
- C) furnizarea către persoana îndreptățită a copiilor, pe un suport durabil, de pe bunurile digitale pe care utilizatorul le-ar fi putut accesa.

Custodele poate stabili o taxă rezonabilă pentru a acoperi costurile de procesare a cererii și de oferire a accesului.

Custodele nu este obligat să ofere acces la bunurile digitale șterse de către utilizator.

#### **4.12. După modul lor de percepere, bunurile pot fi corporale și necorporale.**

Codul civil nu cuprinde o normă expresă dedicată bunurilor corporale și bunurilor incorporeale, așa cum o face în cazul bunurilor descrise mai sus. O asemenea clasificare însă poate fi dedusă din conținutul art.455, care prevede că bunuri sunt toate lucrurile susceptibile apropierii individuale sau colective și drepturile patrimoniale [7, p. 107 - 108].

a) **Bunurile corporale** sunt acele bunuri care au o existență materială, fiind ușor perceptibile simțurilor omului. Sunt bunuri corporale lucrurile care pot fi în formă solidă, lichidă sau sub formă de gaze (un teren, o casă, un automobil, motorina, gazele naturale [6, p.108] conținut digital este livrat pe un suport material [5, art. 477, alin. (2)] etc.

b) **Bunurile incorporeale** sunt valorile economice care au existență ideală, abstractă. Sunt astfel de bunuri drepturile subiective patrimoniale. Doctrina juridică distinge următoarele categorii de bunuri incorporeale:

- *drepturile reale*, altele decât dreptul de proprietate;
- *proprietățile incorporeale*. În această categorie sunt incluse bunuri a căror existență depinde de activitatea și de puterea creatoare a omului, fie dintr-o activitate în curs, fie dintr-o activitate trecută și materializată în creații spirituale (drepturile de proprietate industrială, drepturile de autor și drepturile conexe acestora);
- *titlurile de valoare*. În această categorie sunt incluse valorile mobiliare (acțiunile, obligațiunile, instrumentele financiare derivate sau orice alte titluri de credit încadrate de Comisia Națională a Valorilor Mobiliare în această categorie), precum și efectele de comerț (cambia, biletul la ordin și cecul);
- *drepturile de creață*. În literatura juridică mai veche se sublinia că împărțirea bunurilor în corporale și incorporeale echivalează cu opunerea dreptului de proprietate, pe de o parte, celorlalte drepturi reale și drepturilor de creață, pe de altă parte [3, p. 82].

Clasificarea bunurilor în corporale și incorporeale prezintă importanță sub următoarele aspecte:

- dobândirea proprietății asupra bunurilor mobile ca efect al posesiei de bună-credință [5, art. 527] vizează numai bunurile mobile corporale, iar numai în mod excepțional și unele bunuri mobile incorporeale, anume titlurile la purtător [5, art. 490];
- dobândirea proprietății prin simpla tradițiune (remitere) se aplică numai în privința bunurilor mobile corporale și, prin excepție, a titlurilor la purtător;
- regimul de drept internațional privat diferă, după distincțiile cuprinse în Cartea a V-a a Codului civil.

#### **4.13. Bunurile culturale mobile**

În noile modificări ale CC RM au fost incluse la art. 481 această nouă categorie de bunuri. Nu că aceste bunuri sunt noi în legislația RM, dar noi sunt în legea civilă. Astfel, *sunt bunuri culturale mobile bunurile atribuite, în condițiile legii, la patrimoniul cultural național mobil al Republicii Moldova, precum și bunurile atribuite ca atare de legea aplicabilă regimului juridic al bunului respectiv conform regulilor dreptului internațional privat.*

Bunurile culturale mobile care aparțin Republicii Moldova sau unei unități administrativ-teritoriale fac parte din domeniul public al acesteia.

Regimul juridic al bunurilor culturale mobile, precum și condițiile și limitele în care persoanele fizice și juridice exercită dreptul de proprietate asupra acestora sunt prevăzute de lege, de tratatele internaționale la care Republica Moldova este parte și, în completare, de prezentul cod. Dispozițiile se bazează pe cadrul creat de Legea nr. 280 din 27 decembrie 2011 privind protejarea patrimoniului cultural național mobil [32]. În sensul acestei legi, *patrimoniul cultural național mobil* este ansamblu de bunuri culturale mobile, clasate în patrimoniul cultural național cu valoare deosebită sau excepțională istorică, arheologică, documentară, etnografică, artistică, științifică și tehnică, literară, cinematografică, numismatică, filatelică, heraldică, bibliofilă, cartografică, epigrafică, estetică, etnologică și antropologică, reprezentând mărturii materiale ale evoluției mediului natural și ale relației omului cu acest mediu, ale potențialului creator uman și ale contribuției naționale la civilizația universală.

Astfel, conform prevederilor articolului 4 al Legii, patrimoniul este format din următoarele bunuri culturale mobile:

1) **bunurile arheologice și istorico-documentare** precum:

a) *piese arheologice din săpături terestre și subacvatice sau din descoperiri întâmplătoare, cu excepția eșantioanelor de materiale de construcție, de materiale din situri, care constituie probe arheologice pentru analize de specialitate;*

b) *inscripții, elemente separate provenite din dezmembrarea monumentelor istorice;*

c) *mărturii materiale și documentare privind istoria politică, economică, socială, militară, religioasă, științifică, artistică, sportivă sau din alte domenii;*

d) *manuscrite, incunabule, cărți rare și cărți vechi, publicații de diferite tipuri, cu autografe și ex-librisuri, periodice;*

e) *documente și tipărituri de interes social: documente de arhivă, hărți și alte materiale cartografice;*

f) *obiecte cu valoare memorialistică;*

g) *obiecte și documente cu valoare numismatică, filatelică, heraldică: monede, medalii, decorații, insigne, bancnote, sigilii, brevete, mărci poștale, drapеле și stindarde;*

h) *piese epigrafice;*

i) *fotografii, clișee fotografice, filme, înregistrări audio și video;*

j) *instrumente muzicale;*

k) *uniforme militare și accesorii la ele;*

l) *vestimentație;*

2) **bunurile cu semnificație artistică** precum:

a) *opere de artă plastică: pictură, sculptură, grafică, desen, gravură, stampă și altele asemenea;*

b) *opere de artă decorativă și aplicată: mobilier, tapiserii, covoare, piese din sticlă, ceramică, metal, lemn, textile și din alte materiale, podoabe;*

c) *obiecte de cult: icoane, broderii, orfevrărie, mobilier și altele;*

d) *proiecte și prototipuri de design;*

e) *materiale primare ale filmelor artistice, documentare și de animație;*

f) *monumente de for public, componente artistice expuse în aer liber;*

g) *cărți poștale și ilustrații;*

h) *piese decorative pentru spectacole;*

**3) bunurile cu semnificație etnografică** precum:

- a) *elemente de arhitectură populară;*
- b) *elemente din instalații tehnice;*
- c) *obiecte de uz casnic și gospodăresc;*
- d) *unelte de muncă;*
- e) *produse ale industriei casnice textile: covoare, păretare, prosoape, costume populare și altele asemenea;*
- f) *mobilier;*
- g) *recuzită a obiceiurilor;*
- h) *obiecte de cult;*
- i) *produse de artizanat contemporan;*

**4) bunurile de importanță științifică** precum:

- a) *specimene rare și colecții de zoologie, botanică, mineralogie, petrologie, paleontologie, antropologie, speologie, anatomie;*
- b) *trofee de vânat;*

**5) bunurile de importanță tehnică** precum:

- a) *creații tehnice de unicat;*
- b) *rarity, indiferent de marcă;*
- c) *prototipuri ale aparatelor, dispozitivelor și mașinilor de creație curentă;*
- d) *orologerie;*
- e) *realizări ale tehnicii populare;*
- f) *documente tehnice: proiecte, planuri, schițe, brevete de invenții;*
- g) *mijloace de transport și de telecomunicații;*
- h) *matrițe de CD-uri, CD-ROM, DVD;*

**6) bunurile cu semnificație memorialistică** precum:

- a) *bunuri și obiecte memoriale;*
- b) *documente și fotografii din viața personalităților;*
- c) *piese legate de evenimente de importanță națională și internațională.*

**4.14.** Conform art.476 alin.(1) C.civ., „se consideră obiect de proprietate intelectuală orice rezultat al activității intelectuale, confirmat și protejat prin drepturile corespunzătoare privind utilizarea acestuia”.

Rezultatele activității intelectuale, atributele de identificare a persoanei juridice, mijloacele de individualizare a producției, a lucrărilor executate sau a serviciilor prestate sunt considerate ca obiecte nepatrimoniale, purtând caracterele drepturilor personale nepatrimoniale. Natura juridică a acestor categorii de drepturi determină și particularitățile reglementării și apărării lor [1, p. 268].

Obiectele de proprietate intelectuală se divizează în două categorii [5, art. 476 alin. (2)]:

- a) *obiecte de proprietate industrială (invenții, soiuri de plante, topografii de circuite integrate, mărci, desene și modele industriale, indicații geografice, denumiri de origine și specialități tradiționale garantate);*
- b) *obiecte ale dreptului de autor (opere literare, artistice și științifice etc.) și ale drepturilor conexe (interpretări, fonograme, videograme și emisiuni ale organizațiilor de difuziune etc.).*



De domeniul proprietății intelectuale țin și alte bunuri ce dispun de un sistem de reglementare separat, cum ar fi:

- a) secretul comercial (know-how);
- b) numele comercial.

În cazul obiectelor de proprietate industrială, dreptul asupra acestora apare în urma înregistrării obiectului, a acordării titlului de protecție de către oficiul național de proprietate intelectuală sau în alte condiții prevăzute de legislația națională, precum și în baza tratatelor internaționale la care Republica Moldova este parte. În cazul obiectelor dreptului de autor și ale drepturilor conexe, înregistrarea nu este o condiție obligatorie pentru apariția și exercitarea drepturilor respective, aceste obiecte fiind protejate din momentul creării lor [5, art. 476 alin. (4)].

În condițiile legii, titularul dreptului asupra obiectului de proprietate intelectuală:

- a) poate înstrăina dreptul prin cesiune;
- b) poate permite exploatarea lui de către terți prin licență exclusivă sau neexclusivă;
- c) poate exercita alte drepturi morale și patrimoniale prevăzute de lege în privința obiectului dreptului exclusiv [5, art. 476 alin.(5)].

Cu excepțiile prevăzute de lege, nicio persoană nu poate exploata dreptul asupra obiectului de proprietate intelectuală al altuia fără licența corespunzătoare. Licența se prezumă neexclusivă dacă nu s-a prevăzut expres contrariul.

Dreptul asupra obiectului de proprietate intelectuală și dreptul acordat prin licență se consideră bunuri incorporale și pot fi grevate cu drepturi reale limitate în folosul terților [5, art. 476 alin. (7)].

În articolul de față sunt cuprinse reglementări cu caracter general referitor la rezultatele activității intelectuale ale persoanei fizice sau persoanei juridice. De aceea, reglementările propriu zise ale acestor drepturi personale nepatrimoniale le găsim în alte acte normative. Unul din aceste acte este Legea privind dreptul de autor și drepturile conexe [33], care reglementează raporturile ce apar la crearea și valorificarea operelor literare, artistice și științifice (dreptul de autor), a interpretărilor, fonogramelor, videogramelor și emisiunilor organizațiilor de difuziune (drepturi conexe), precum și alte drepturi care sunt recunoscute în legătură privind activitatea intelectuală din domeniul literaturii, artei și științei.

De asemenea, reglementări referitoare la dreptul de autor, cât și la protecția acestuia întâlnim în următoarele acte normative:

– Codul penal al RM nr.985 din 18.04.2002. În Monitorul Oficial nr.72-74 din 14.04.2009 (art.185<sup>1</sup>. Încălcarea dreptului de autor și a drepturilor conexe, art.185<sup>3</sup>. Declarațiile intenționate false în documentele de înregistrare ce țin de protecția proprietății intelectuale);

– Codul contravențional al RM nr.218 din 24.10.2008. În Monitorul Oficial nr.78-84 din 17.03.2017 (art.96. Încălcarea dreptului de autor și a drepturilor conexe);

– Legea cu privire la Agenția de Stat pentru Proprietatea Intelectuală nr.114 din 03-07-2014. În Monitorul Oficial nr.282-289 din 26-06-2014;

– Legea privind protecția mărcilor nr.38 din 29-02-2008. În Monitorul Oficial nr.99-101 din 06-06-2008;

– Legea privind protecția desenelor și modelelor industriale nr.161 din 12-07-2007. În Monitorul Oficial nr.136-140 din 31-08-2007;

– Hotărârea Guvernului nr.89 din 10-02-2012 pentru aprobarea Regulamentului cu privire la înregistrarea obiectelor dreptului de autor și drepturilor conexe. În Monitorul Oficial nr.34-37 din 17-02-2012;

– Hotărârea Guvernului nr.641 din 12-07-2001 despre tarifele minime ale remunerației de autor. În Monitorul Oficial nr.81-83 din 20-07-2001.

De asemenea, menționăm că Republica Moldova este parte a mai multor convenții internaționale, printre care:

– Convenția pentru constituirea Organizației Mondiale pentru Protecția Proprietății Intelectuale (OMPI), adoptată la Stockholm la 14 iulie 1967 (data aderării – 25 decembrie 1991);

– Convenția de la Berna privind protecția operelor literare și artistice (Actul de la Paris din 24 iulie 1971, modificat la 28 septembrie 1979) (data aderării – 2 noiembrie 1995);

– Convenția internațională pentru ocrotirea drepturilor interpreților, producătorilor de fonograme și ale organizațiilor de diviziune, adoptată la Roma la 26 octombrie 1961 (data aderării – 5 decembrie 1995);

– Convenția Universală cu privire la dreptul de autor, adoptată la Geneva la 6 septembrie 1952 – în acțiune pe teritoriul republicii de la data aderării la Convenție a Uniunii Sovietice (27 mai 1973), din competența căreia s-a deprins Republica Moldova [1, p. 270 - 271].

**5. Concluzii finale.** Scopul prezentului studiu a constatat în studierea bunurilor ca o varietate de obiecte ale raporturilor juridice civile, specificul poziției lor în sistemul obiectelor și particularitățile regimului lor juridic pentru a clarifica prevederile teoretice și a elabora recomandări practice în acest sens.

Importanța clasificării bunurilor în dreptul civil rezidă în atribuirea unui regim juridic specific fiecărui tip de bun, în dependență de semnificația și de problemele care apar în jurul lor.

Caracteristicile regimului juridic al bunurilor le oferă unicitate, care constă în faptul că proprietățile sale tipice nu acționează ca niște reguli speciale, diferite de cele de bază.

Astfel, trăsăturile regimului bunurilor în sine sunt baza, arhetipul, prototipul regimurilor tuturor celorlalte obiecte ale dreptului civil.

În consecință, studiul stării juridice a bunurilor, clasificarea acestora ca una dintre pietrele de temelie ale universului juridic, nu își va pierde niciodată relevanța. În orice caz, va fi atât timp cât umanitatea continuă să se separe de lumea din jur, atâta timp cât o persoană există în lumea lucrurilor.

#### **Bibliografia**

1. Ursu V., Chiriac N. *Dreptul civil. Introducere: Manual*. Chișinău: Tehnica-UTM, 2020. - 492 p.
2. *Dicționar juridic LegeAZ*. <https://legeaz.net/dictionar-juridic/obiectul-raportului-juridic-civil> (vizitat la 10.07.2019).
3. Boroi G. *Drept civil. Partea generală. Persoanele*. București: ALL BECK, 2001. – 296 p.
4. Bîtcă I. *Note de curs. Drept civil. Partea generală*. Chișinău, 2013. – 124 p.
5. *Codul Civil al R.Moldova* nr.1107 din 06.06.2002. Republicat în Monitorul Oficial nr.66-75 din 01.03.2019 art.132.
6. Turianu C. *Curs de drept civil*. Craiova: Universitară, 2005. – 247 p.
7. Baieș S., Roșca N. *Drept civil. Partea generală. Persoana fizică. Persoana juridică*. Vol.1. Chișinău: Cartier, 2004. – 400 p.

8. Bunurile –definitia bunurilor <https://www.stiucum.com/drept/drept-civil/Bunurile-definitia-bunurilor33758.php> (vizitat la 12.02.2021)
9. Красавчикова Л.О. *Понятие и система личных неимущественных прав граждан в гражданском праве РФ*. Москва, 1994. – 435 с.
10. Малеин М.Н. *Личные неимущественные права граждан: понятие, осуществление, защита*. Москва: МЗ Пресс, 2001. – 244 с.
11. *Legea privind transplantul de organe, țesuturi și celule umane* nr.42 din 06.03.2008. În: Monitorul Oficial nr.81 din 25.04.2008.
12. *Codul penal al RM* nr.985 din 18.04.2002. În: Monitorul Oficial nr.72-74 din 14.04.2009.
13. Charrier Jean-Loup, Chiriac A.. *Codul Convenției Europene a Drepturilor Omului*. Chișinău: Balacron, 2008. – 724 p.
14. *Legea cu privire la arme* nr.130 din 08.06.2012. În: Monitorul Oficial nr. 222-227 din 26-10-2012.
15. Pușcă Andy, Costache Mirela. *Drept civil. Partea generală*. Anul I, semestrul I. Galați: Universitatea Danubis, 2010. – 115 p.
16. *Codul contravențional al RM* nr.218 din 24.10.2008. În: Monitorul Oficial nr. 78 - 84 din 17.03.2017.
17. Palii A. *Dicționar explicativ al limbii române*. Chișinău: Epigraf, 2009. – 2280 p.
18. *Nota informativă la proiectul Legii privind modificarea și completarea Cărții I a Codului Civil al Republicii Moldova, 2016*, [http://justice.gov.md/public/files/transparența\\_in\\_procesul\\_decizional/coordonare/2017/aprilie/Nota\\_informativ\\_proiect\\_amendare\\_Cod\\_civil\\_xxxxxxx.pdf](http://justice.gov.md/public/files/transparența_in_procesul_decizional/coordonare/2017/aprilie/Nota_informativ_proiect_amendare_Cod_civil_xxxxxxx.pdf).
19. Antohi L., Baieș S., Băieșu A. ș.a. *Comentariul Codului Civil al R. Moldova*. Chișinău: Tipografia Centrală, 2006. – 1265 p.
20. *Codul funciar al RM*, adoptat prin Legea nr.828 din 25.12.1991 // Republicat în M.O. nr.107 din 04.09.2001.
21. *Legea cadastrului bunurilor imobile* nr.1543 din 25.02.1998. În: Monitorul Oficial al Republicii Moldova nr.44-46 din 21.05.1998.
22. *Legea nr.354-XV din 28.10.2004 cu privire la formarea bunurilor imobile*. În: Monitorul Oficial al Republicii Moldova, 2004, nr.233-236.
23. *Codul fiscal al RM* nr. 1163 din 24.04.1997, republicat în Monitorul Oficial al Republicii Moldova. Ediție Specială, 08 februarie 2007, p.4.
24. Ungureanu Carmen Tamara. *Drept Civil. Suport de curs* <http://jurnalulsportivului.files.wordpress.com/2012/02/drept-civil-an-i-sem-i-conf-dr-carmen-tamara-ungureanu.pdf>.
25. Diaconu Constantin, Fircă Cristian. *Drept civil. Partea generală. Persoanele*. Curs în tehnologie ID/IFR. București: Editura Fundației România de Măine, 2014. – 360 p.
26. Boroi G., Anghelescu C.A. *Curs de drept civil. Partea generală*. București: Hamangiu, 2012. – 422 p.
27. Jora Cristian. *Unele considerații cu privire la clasificarea bunurilor conform reglementărilor Noului Cod Civil*. [http://cogito.ucdc.ro/2012/vol4n1/ro/10\\_uneleconsideratiicuprivirelaclasificareaabunurilorcristianjora.pdf](http://cogito.ucdc.ro/2012/vol4n1/ro/10_uneleconsideratiicuprivirelaclasificareaabunurilorcristianjora.pdf) (accesat: 03.04.2020).
28. Trofimov I. *Dreptul civil. Introducere în dreptul civil*, Academia Ștefan cel Mare a MAI, ed. Adriga Vis, Chișinău S. n., 2020, 250 p.
29. Lupulescu D. *Drept civil. Introducere în dreptul civil*. București: Lumina Lex, 1998. – 239 p.
30. *Legea privind delimitarea proprietății publice* nr.29 din 05.04.2018. În: Monitorul Oficial nr.142-148 din 04.05.2018.
31. Palamarciuc V. *Bunul digital – inovația și dilemele juridice în reforma Codului Civil din Republica Moldova*. <https://juridicemoldova.md/3086/bunul-digital-inovatia-si-dilemele-juridice-reforma-codului-civil-din-republica-moldova.html> (accesat: 03.04.2020).
32. *Legea privind protejarea patrimoniului cultural național mobil* nr. 280 din 27-12-2011. În: Monitorul Oficial nr. 82-84 din 27.04.2011.
33. *Legea privind dreptul de autor și drepturile conexe* nr. 139 din 02.07.2010. În: Monitorul Oficial nr. 191 - 193 din 01.10.2010.

[https://doi.org/10.52326/jss.utm.2021.4\(2\).15](https://doi.org/10.52326/jss.utm.2021.4(2).15)  
UDC 343.13



## JUDGING THE CASE IN THE ABSENCE OF THE DEFENDANT REMOVED FROM THE TRIAL ON GROUNDS OF DISCIPLINE

Arina Ialanji\*, ORCID ID: 0000-0002-3520-7197

*Technical University of Moldova, 168, Ștefan cel Mare bd., Chișinău, Republic of Moldova*  
*\*arina.ialanji@dp.utm.md*

Received: 02. 22. 2021

Accepted: 04. 24. 2021

**Abstract.** The article analyzes the legal provisions governing the conditions of trial in the absence of the defendant if he is removed from the trial for disciplinary reasons by adjusting them to practical cases both at national level and in the jurisprudence of the European Court and by highlighting gaps in the national legislation in this regard. The researched topic is a current one since the compromising behavior of the defendant during the court hearings is attested more and more often, a fact that directly threatens the order and solemnity of the criminal trial, as well as the interests of the participants in the trial. The issue in question acquires an important connotation, including through the uneven practice applied by the courts on how to judge the case by removing the defendant from the trial, as well as the negative consequences that arise as a result - nullity of the judgment adopted, thus violating the principle of efficient administration of justice. Based on the obtained results, the legal omissions in the part related to the trial procedure in the absence of the defendant are revealed, the judicial errors admitted in practice in this respect, being elaborated preliminary versions for their solution, which can be used effectively for the application of legal provisions. versions for their solution. the activity of applying the legal provisions in practice.

**Keywords:** *the right to be present at the trial, criminal trial, legal summons, removal of the defendant from the courtroom on grounds of discipline, trial of the case in the absence of the defendant, order and solemnity of the criminal trial.*

**Rezumat.** Articolul analizează dispozițiile legale care reglementează condițiile procesului în absența inculpatului, dacă acesta este eliminat din proces din motive disciplinare, ajustându-le la cazurile practice atât la nivel național, cât și în jurisprudența Curții Europene, prin evidențierea lacune în legislația națională în acest sens. Subiectul cercetat este unul actual, întrucât comportamentul compromițător al inculpatului în timpul ședințelor de judecată este atestat din ce în ce mai des, fapt care amenință în mod direct ordinea și solemnitatea procesului penal, precum și interesele participanților la proces. Problema în cauză capătă o conotație importantă, inclusiv prin practica inegală aplicată de instanțe cu privire la modul de judecare a cauzei prin eliminarea inculpatului din proces, precum și consecințele negative care decurg ca urmare - nulitatea hotărârii adoptate,

încălcând astfel principiul administrării eficiente a justiției. Pe baza rezultatelor obținute, se relevă omisiunile legale din partea legată de procedura de judecată în absența inculpatului, erorile judiciare admise în practică în acest sens, fiind elaborate versiuni preliminare pentru soluționarea acestora, care pot fi utilizate eficient pentru aplicarea prevederilor legale.

**Cuvinte cheie:** *dreptul de a fi prezent la proces, proces penal, citarea legală, înlăturarea inculpatului din sală pe motiv de disciplină, judecarea cauzei în lipsa inculpatului, ordinea și solemnitatea procesului penal.*

## 1. Introducere

Dreptul persoanei acuzate de a fi prezentă în persoană la proces este inclus în dreptul la un proces echitabil prevăzut la articolul 6 din Convenția Europeană Drepturilor Omului și a Libertăților Fundamentale [1].

Respectarea drepturilor omului rămâne piatra de temelie a unei societăți democratice și o condiție de acces în comunitatea internațională. Astfel, aspirațiile europene ale Republicii Moldova pot fi realizate doar respectând standardele consfințite și unanim recunoscute ale justiției. Îndeosebi, acest standard urmează a fi respectat în cadrul justiției penale, unde există în modul cel mai avansat riscul afectării drepturilor și libertăților.

Pe un loc deosebit printre principiile dreptului procesual penal se plasează principiul dreptului la un proces echitabil care garantează și dreptul persoanei acuzate în materie penală de a participa la propriul proces cunoscând toate piesele dosarului, raportat la înlăturarea acestuia din proces drept sancțiune pentru nerespectarea ordinii și solemnității.

Pe de altă parte, judecarea cauzei în lipsa inculpatului implică unele derogări de la normele generale ale procedurii penale, precum principiul contradictorialității și egalității armelor, creând astfel riscul afectării, în activitatea practică, a drepturilor procesuale. Prin urmare, asigurarea unei balanțe echitabile între realizarea scopurilor procesului penal și drepturile persoanei absente la procesul său constituie una din problemele fundamentale ale procesului penal contemporan. O importanță deosebită se acordă întrebării privind asigurarea pe parcursul procesului a drepturilor inculpatului absent. Cu toate acestea, având în vedere că scopul procesului penal implică și apărarea persoanei împotriva condamnării neîntemeiate și ilegale, apărarea drepturilor și libertăților participanților la proces, inclusiv a victimei, procedura judecării cauzei în lipsa inculpatului ar trebui să fie echilibrată, astfel încât urmează a fi cumulate interesele publice și interesele legitime ale persoanelor implicate în procesul penal.

## 2. Metode și materiale utilizate

Studiul efectuat a avut la bază cercetarea legislației naționale în domeniul sancționării inculpatului ce nu respect ordinea și solemnitatea procesului penal. Pentru fundamentarea cercetării propuse, s-a utilizat, în principal următoarele metode de cercetare: - metoda cantitativă, cu ajutorul căreia am adunat, stocat și interpretat informațiile extrase din legislație, jurisprudență și doctrina internă, dar și cele aparținând doctrinei și jurisprudenței internaționale în materie; - metoda științifică, pentru prelucrarea logico-juridică a datelor obținute prin metoda descrisă anterior, identificând problemele existente la momentul actual în legislația, jurisprudența și doctrina națională; - metoda logică (analiza deductivă, inductivă, generalizarea – pentru examinarea și interpretarea cadrului legal și a materialului doctrinar); un accent aparte s-a pus pe utilizarea metodei

empirice. În scopul realizării obiectivelor propuse, a fost studiată pe larg jurisprudența internă cât și a Curții Europene a Drepturilor Omului.

### 3. Rezultatele obținute și discuții

Legislația procesual penală a RM în art. 321 Cod de Procedură Penală [2], stabilește participarea obligatorie a inculpatului la proces, însă de la regula dată, potrivit legii interne, am putea distinge următoarea excepție admisibilă prin lege pentru judecarea cauzei în lipsa inculpatului:

- *Este eliberat de la prezența în sală pe motiv de disciplină.* Modalitatea dată de judecare a cauzei în lipsa inculpatului nu este stipulată în cadrul normei procesual penale ce reglementează participarea inculpatului la proces și condițiile legale pentru judecarea cauzei în lipsa acestuia. Putem conchide că, în fapt, aceasta implică o sancțiune ce se aplică inculpatului pentru nerespectarea ordinii și solemnității în proces din partea acestuia și a curma comportamentul abuziv al lui manifestat prin lipsa de respect față de instanță, fiind stipulată în norma legală ce reglementează măsurile care se iau față de cei ce încalcă ordinea ședinței de judecată.

Art. 333 alin. (4) CPP prescrie că participanții la ședința de judecată sunt obligați să mențină ordinea în ședință. Reguli privind modul de comportament al participanților la proces și al altor persoane în cadrul instanțelor, precum și la ședința de judecată, inclusiv a inculpatului pot fi regăsite și în Regulile de conduită a justițiabililor și a altor persoane în instanța judecătorească, elaborate de către Consiliul Superior al Magistraturii, la pct. 14 - 15 [3].

În lucrarea sa, Ig. Dolea indică că față de inculpat nu se aplică o altă sancțiune disciplinară decât atenționarea asupra necesității respectării disciplinei, care este mai mult o măsură de prevenție decât o sancțiune procesuală [4]. În dicționarul de drept procesual penal, îndepărtarea din sala de ședință este definită ca măsură ce poate fi luată de președintele completului de judecată în vederea asigurării ordinii și solemnității ședinței de judecată. Această măsură se dispune când una din părți sau oricare altă persoană în mod repetat și prin abateri grave tulbură ședința, cu toate că președintele i-a atras atenția să respecte disciplina [5].

În jurisprudența sa, Curtea Europeană a statuat că pentru buna administrare a justiției, ordinea și solemnitatea ședinței de judecată constituie elemente definitorii ale procedurii judiciare. Nerespectarea flagrantă de către inculpat a normelor elementare de conduită adecvată nu poate și nu trebuie să fie tolerată [6]. Potrivit art. 63 alin. (1) și (2) al Statutului Curții Penale Internaționale, se stabilește că, dacă acuzatul, prezent în fața Curții, tulbură continuu desfășurarea procesului, Camera de primă instanță poate ordona evacuarea acestuia din sala de ședință, având grijă ca acesta să urmărească procesul și să dea instrucțiuni avocatului său [7].

Alin. (2) al art. 334 CPP stabilește că, dacă inculpatul încalcă ordinea ședinței și nu se supune dispozițiilor președintelui ședinței, ultimul îi atrage atenția asupra necesității respectării disciplinei, iar în caz de repetare a încălcării ori de abatere gravă de la ordine, se dispune îndepărtarea lui din sala de judecată, continuând procesul în lipsa acestuia.

**În atare condiții, legiuitorul reglementează modalitatea de aplicare a sancțiunilor procesuale pentru nerespectarea ordinii de către inculpat în ședința de judecată. Sancțiunile procedurale** pot fi definite ca măsuri cu caracter de constrângere menite să garanteze respectarea normelor juridice care prescriu formele și condițiile de realizare a activității judiciare [8].

Respectiv, îndepărtarea inculpatului din sală constituie o sancțiune pentru nerespectarea ordinii procesului prin nesupunerea prevederilor legale și urmează a fi tratată ca o sancțiune datorată culpei acestuia. În atare condiții, instanța de judecată trebuie să acorde prioritate principiului oficialității și necesității îndeplinirii justiției, decât posibilității asigurării prezenței în persoană a inculpatului la proces și accesul liber la justiție, prin realizarea unor acțiuni de către acesta de împiedicare în desfășurarea justiției și lipsă de respect.

Temei pentru îndepărtarea inculpatului din sala de ședințe urmează să servească încălcarea repetată de către acesta a disciplinei și refuzului de a se supune deciziei instanței, cu condiția că anterior acesta a fost preîntâmpinat referitor la inacceptabilitatea unui astfel de comportament pe parcursul procesului și consecințele ce pot surveni. Un lucru destul de util ar fi emiterea unei încheieri motivate de îndepărtare a inculpatului de la proces ce poate fi contestată pentru a evita casarea sentinței, cum s-a stabilit în majoritatea spețelor cercetate în cadrul prezentei lucrări.

Astfel, în cauza *Ananiev contra Rusiei*, CtEDO a stabilit că refuzul aparent al inculpaților de a respecta principiile de bază ale bune conduite nu poate și nu ar trebui permis. Curtea a acceptat că conduita reclamantului a fost de așa natură încât îndepărtarea sa din sala de judecată și continuarea ședinței fără prezența sa ar putea fi justificate. Însă, obligația președintelui era să determine dacă putea să prevadă în mod clar consecințele unui astfel de comportament [9].

Urmează a fi relevat că legislația diferențiază modalitatea de aplicare a sancțiunilor procesuale în funcție de subiectul culpabil pentru comiterea abaterii, astfel încât toți ceilalți pot fi supuși amenzii judiciare, cu excepția inculpatului care inițial urmează a fi atenționat pentru comportamentul său, după care, dacă continuă acțiunile sale, poate fi înlăturat de la proces.

În jurisprudența sa, Curtea Constituțională a statuat limitele legalității procesului echitabil prin prisma sintagmei de îndepărtare a inculpatului din sala de ședințe, continuând procesul în lipsa acestuia, în raport cu acțiunile acestuia, stabilind că dispozițiile articolului 334 alin. (2) din Codul de procedură penală permit instanței de judecată de a dispune îndepărtarea inculpatului din sala de judecată și să continue procesul în lipsa acestuia, dacă acesta încalcă ordinea ședinței și nu se supune dispozițiilor președintelui ședinței. Or, accesul liber la justiție constituie un aspect inerent al dreptului la un proces echitabil, cuprinzând mai multe relații și drepturi fundamentale. Exercițarea dreptului la un proces echitabil nu poate avea loc decât într-un anumit cadru juridic, stabilit de legiuitor, cu respectarea anumitor exigențe, de natură a preveni eventualele abuzuri și tergiversarea soluționării cauzelor deduse judecării [10].

Se observă că președintelui ședinței de judecată, având rolul de a asigura respectarea ordinii în ședința de judecată [art. 317 din Codul de procedură penală], îi revine sarcina de a explica *ope legis* inculpatului că este obligat să respecte ordinea stabilită în ședința de judecată, precum și că în eventualitatea unei desconsiderări a acestui imperativ poate fi îndepărtat din sala de judecată, asumându-și în acest sens consecințele juridice asupra dreptului de a participa la propriul proces. Respectiv, inculpatul poate să decidă până la aplicarea măsurii de îndepărtare din sala de judecată, în cunoștință de cauză, dacă dorește sau nu să beneficieze de dreptul său de a participa la propriul proces. Or, desconsiderând normele elementare de conduită corespunzătoare, inculpatul prin comportamentul său își exprimă fără echivoc voința de a nu participa la proces. Se atestă că din dispozițiile legale

nu reiese că inculpatul va fi privat de dreptul său de a participa la judecarea cauzei pe tot parcursul procesului judiciar, or inculpatului, fiind îndepărtat din sala de judecată i se menține dreptul de a fi asistat și apărat în mod efectiv de un avocat ales de el sau numit din oficiu.

În același timp, având în vedere că pe parcursul judecării cauzei în primă instanță inculpatul poate fi îndepărtat de mai multe ori din sala de judecată pentru încălcarea ordinii ședinței de judecată, totuși se observă că dispozițiile art.334 alin.(2) din CPP stabilesc că sentința se va pronunța în prezența inculpatului sau se va aduce la cunoștința acestuia imediat după pronunțare, or, potrivit art.401 din CPP, inculpatul are dreptul să atace sentința cu apel în vederea unei noi judecări în fapt și în drept a cauzei. Potrivit jurisprudenței Curții Europene, procesul este echitabil dacă acuzatului i s-a permis să atace sentința de condamnare *in absentia* și a avut dreptul de a fi prezent la ședința instanței de apel [11].

Atunci când procedurile privesc numai chestiuni juridice, nu se poate ridica o problemă din refuzul de a-i permite acuzatului să fie prezent, alături de avocatul său. În cauza *Kremzow contra Austriei*, Curtea a constatat o încălcare atunci când reclamantul a fost exclus de la procesul de apel împotriva sentinței, fiind condamnat la închisoare pe viață într-o instituție specială. Deoarece evaluarea caracterului, stării de spirit și motivării reclamantului era importantă pentru proceduri, spiritul de echitate impunea ca acesta să participe la proceduri alături de avocatul său.

Inculpatul poate renunța la o audiere publică, dacă acest fapt se produce din libera sa voință și într-un mod lipsit de echivoc, totuși aceasta nu trebuie să se contrapună unui interes public important. În cauza *Botten contra Norvegiei*, Curtea a considerat că instanța superioară era obligată să ia măsuri concrete pentru a asigura prezența acestuia ca necesară pentru o evaluare adecvată [12].

Referitor la aplicarea prevederilor privind înlăturarea de la proces pentru motiv de disciplină, am putea menționa decizia Curții Supreme de Justiție în privința lui Ș.R., unde s-a stabilit că inculpatul a fost condamnat la 18 ani închisoare, fiind contestat actul judiciar. Referitor la argumentele precum că inculpatului i-a fost încălcat dreptul la apărare și dreptul la un proces echitabil, instanța de apel a indicat că RȘ a avut un comportament inadecvat în cadrul ședinței, iar, în scopul asigurării bunei funcționări a instanței și securității participanților la proces, instanța corect a dispus îndepărtarea lui din sala de judecată, cu continuarea procesului penal în lipsă, sentința fiindu-i adusă la cunoștință. Prin decizia sa, instanța ierarhic superioară a admis recursul cu remiterea cauzei la rejudecare, indicând că în prima instanță inculpatului i-a fost atrasă atenția să se supună dispozițiilor președintelui ședinței de judecată privind menținerea ordinii în ședință, iar, ulterior, pentru încălcarea repetată a ordinii, a fost îndepărtat din sala de ședințe pe parcursul judecării cauzei penale, cu pronunțarea sentinței în prezența acestuia.

S-a reținut că instanța de apel neîntemeiat a respins demersurile inculpatului RȘ privind audierea martorului și a unui specialist, odată ce inculpatul nu a participat la examinarea cauzei în prima instanță, fiind astfel încălcat dreptul inculpatului la un proces echitabil. Curtea a considerat că prima instanță a încălcat dreptul inculpatului de a participa efectiv la desfășurarea procesului penal, nefiind audiat în ședința de judecată, or, avocatul care reprezenta interesele inculpatului a solicitat audierea inculpatului pentru a nu încălca dreptul acestuia la un proces echitabil și principiul contradictorialității, însă instanța a refuzat demersul din motiv că inculpatul a fost îndepărtat din sala de judecată până la



pronunțarea sentinței. La caz, prima instanță urma să concretizeze dacă inculpatul solicită reînțoarcerea în sală cu obligația de a nu mai încălca ordinea, cu atât mai mult că acesta ulterior îndepărtării din sala de judecată și până la pronunțarea sentinței a fost escortat în instanță, însă nu a fost dus în sala de ședințe [13].

Prin decizia Colegiului Penal al Curții de Apel Chișinău [14], a fost adoptată o nouă hotărâre la caz, drept motive fiind reținute argumentele în fapt și în drept a Curții Supreme de Justiție pe marginea ingerințelor admise la judecarea cauzei în lipsa inculpatului.

Considerăm opinia instanțelor superioare una corectă, din moment ce s-a constatat că la examinarea fondului inculpatul a realizat comportamentul nedisciplinar al său și pleda pentru participarea ulterioară la proces, stare ce urma, de fapt, a fi reținută de instanța de fond prin continuarea procesului în prezența inculpatului, reieșind din prevederile legale în domeniu. Din moment ce inculpatul este îndepărtat din sală pentru încălcarea ordinii, acesta dispune de dreptul legal de a cere revenirea în proces dacă a realizat caracterul nedemn al acțiunilor sale, or înlăturarea inculpatului de la proces în sine deja este o sancțiune ce se aplică acestuia, astfel nu poate fi suplimentar privat de dreptul de a administra și cere cercetarea probelor.

Legalitatea înlăturării de la proces pe motiv de încălcare a ordinii o putem releva din cauza penală de învinuire a lui FI, unde instanța de fond a judecat cauza în lipsa inculpatului, reținând că, pe parcursul examinării cauzei, inculpatul de mai multe ori a fost înlăturat din sala ședinței de judecată, deoarece, după atenționarea acestuia asupra încălcărilor ordinii și disciplinei în ședință și asupra lipsei de respect de care dădea dovadă, fiind avertizat despre faptul că va fi înlăturat din sala ședinței, acesta nu se conforma indicațiilor instanței. Inculpatul, însă, a fost asistat de către doi avocați care i-au apărut interesele în lipsa acestuia. Instanța a reținut că în speța *Marguš c. Croației*, Curtea Europeană a conchis că eliminarea forțată a reclamantului din sala de ședințe în timpul audierii nu a încălcat dreptul acestuia la auto-apărare, ținând cont de faptul că însăși reclamantul a demonstrat un comportament incompatibil, fiind de două ori atenționat de către tribunal să se comporte adecvat [15]. Prin contestarea sentinței în cadrul recursului, inculpatul a invocat tergiversarea examinării cauzei penale, motive ce nu au fost reținute de instanța de apel, deoarece, după multiplele cereri de amânare a inculpatului, instanța a reluat cercetarea judecătorească pentru audierea inculpatului, care insista de a fi audiat, și cu admiterea acestuia în ședința de judecată după înlăturare în legătură cu comportamentul agresiv, încălcarea disciplinei și neconformării indicațiilor președintelui de ședință [16]. Astfel, a fost constatat că termenul îndelungat de judecare a cauzei se datorează comportamentului abuziv al inculpatului. În prezenta speță, observăm că inculpatului de mai multe ori i-a fost acordată posibilitatea de a participa la proces în urma îndepărtării sale de la ședință pe temei de disciplină, însă în rezultat acesta nu se reabilita, astfel fiind apreciată corectă soluția instanței privind judecarea cauzei în lipsa sa, prioritate având necesitatea înfăptuirii justiției și respectării drepturilor celorlalți participanți la proces.

### **Concluzie:**

În concluzie, majoritatea cauzelor de judecare în lipsa inculpatului implică unele ingerințe în drepturile acestuia, din care motive de cele mai dese ori hotărârile judecătorești adoptate la caz sunt casate, astfel prin lege ar trebui stabilite reguli generale ce trebuie respectate de către instanțele judecătorești în cazul adoptării deciziei de examinare în lipsa inculpatului, pentru a evita implicarea unor ingerințe în drepturile victimelor referitoare la

termenul rezonabil, precum și nerealizarea scopului legii procesual penale de înfăptuire a justiției și sancționării persoanelor culpabile în comiterea infracțiunilor.

În baza cercetării realizate am concluzionat că judecarea cauzei în lipsa inculpatului în cazul când acesta este îndepărtat de la proces se află în legătură cauzală directă cu comportamentul abuziv și agresiv al acestuia, care în mod intenționat induce la încălcarea ordinii în cadrul ședinței și manifestă lipsa de respect față de instanță și ceilalți participanți la proces, instanței de judecată revenindu-i obligația de aplicare corectă a prevederilor ce prescriu sancționarea acestuia prin privarea de dreptul participării la proces, care presupune că temei pentru îndepărtarea inculpatului din sala de ședințe urmează să servească încălcarea repetată de către acesta a disciplinei și refuzului de a se supune deciziei instanței, cu condiția că anterior acesta a fost preîntâmpinat referitor la inacceptabilitatea unui astfel de comportament pe parcursul procesului și consecințele ce pot surveni. Un lucru destul de util ar fi emiterea unei încheieri motivate de îndepărtare a inculpatului de la proces ce poate fi contestată pentru a evita ulterioare ingerințe în drepturile acestuia.

### Bibliografie

1. Convenția Europeană a Drepturilor Omului, elaborată de Consiliul Europei, semnată la Roma pe 04 noiembrie 1950, ratificată de Republica Moldova prin Hotărârea Parlamentului nr.1298 din 24 iulie 1997
2. *Codul de Procedură Penală al Republicii Moldova*. În Monitorul Oficial al Republicii Moldova, 2003, nr. 104-110.
3. Hotărârea CSM privind aprobarea Regulilor de conduită a justițabililor și a altor persoane în instanța judecătorească, nr. 504/17 din 03 iunie 2014, în Monitorul Oficial, 2014, nr. 249-255/1241
4. Dolea I. *Comentariu aplicativ al Codului de Procedură Penală*. op.cit., p. 761.
5. Rusu V., Gavajuc S., Gheorghieș A., Gherasim D., Gherasim A., Rusu L. *Dicționar de drept procesual penal*. Chișinău: Pontos, 2012. - 248 p. ISBN 978-9975-51-351-7.
6. *Ananyev vs Federația Rusă*, nr. 20292/04, ECHR din 30 iulie 2009, par. 44. Disponibil: <http://hudoc.echr.coe.int/eng?i=001-150432>. [citat 12 septembrie 2016]
7. Statutul de la Roma al Curții Penale Internaționale, adoptat la 17 iulie 1998, ratificat de către RM prin Legea nr. 212 din 09.09.2010, în MO nr.190 la 29 septembrie 2010
8. Disponibil: <https://legeaz.net/dictionar-juridic/sanctiuni-procedurale>. © 2018 LegeAZ.net. [citat 15 iunie 2018]
9. *Ananyev vs Federația Rusă*, nr. 20292/04, ECHR din 30 iulie 2009, par. 45-46. [citat 12 septembrie 2016] Disponibil: <http://hudoc.echr.coe.int/eng?i=001-150432>.
10. *Decizia Curții Constituționale de inadmisibilitate a sesizării nr.16g/2017 privind excepția de neconstituționalitate a unor prevederi din articolul 334 alin.(2) din Codul de procedură penală al Republicii Moldova nr. 11 din 02 februarie 2017*. Monitorul oficial al RM, 2017, nr. 181-189
11. *Idalov vs Federația Rusă*, nr. 5826/03, ECHR din 22 mai 2012, par. 171. [citat 28 martie 2018] Disponibil: <http://hudoc.echr.coe.int/eng?i=001-182664>.
12. *Botten vs Norvegia*, nr. 16206/90, ECHR din 19 februarie 1996, par.53. [citat 15 februarie 2017] Disponibil: <http://hudoc.echr.coe.int/eng?i=001-57970>.
13. *Decizia Curții Supreme de Justiție din 13 decembrie 2016, nr. 1ra-1594/2016, în cauza penală de învinuire a lui Ș. Radu*, Disponibil: [http://jurisprudenta.csj.md/search\\_col\\_penal.php?id=7949](http://jurisprudenta.csj.md/search_col_penal.php?id=7949)
14. *Decizia Colegiului Penal al Curții de Apel Chișinău din 23 noiembrie 2017, nr. 1a-213/17 privind-l pe Ș Radu*, Disponibil: [https://cac.instante.justice.md/ro/pigd\\_integration/pdf/660a4d16-cdeb-e711-80d5-0050568b7027](https://cac.instante.justice.md/ro/pigd_integration/pdf/660a4d16-cdeb-e711-80d5-0050568b7027)
15. *Cauza penală nr. 1-93/2013 de învinuire a lui FI în săvârșirea infracțiunii prevăzută la art. 155, 179 alin. (2), 189 alin. (3) lit. b) și art. 287 alin. (1) Cod Penal al RM, examinată de către Judecătoria Ungheni la 27 septembrie 2013*, Disponibil: [https://jun.instante.justice.md/ro/pigd\\_integration/pdf/35618e23-7427-e311-9668-005056a5fb1a](https://jun.instante.justice.md/ro/pigd_integration/pdf/35618e23-7427-e311-9668-005056a5fb1a)
16. *Decizia Colegiului Penal al Curții Supreme de Justiție nr. 1ra-872/2015 din 11 august 2015 privind examinarea recursului lui FI și avocatului acestuia*, Disponibil: [http://jurisprudenta.csj.md/search\\_col\\_penal.php?id=4752](http://jurisprudenta.csj.md/search_col_penal.php?id=4752)