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**Global Education, Teaching and Learning
(IAC-GETL 2021)**

Art Therapy Intervention Short Programs in Different Educational Settings: Elementary School, High School and University Students

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Abstract

When resources are limited, temporally and thematically structured short programs are required to aid students in educational settings with subclinical symptoms. The authors provide three examples of such art therapy based or group art therapy programs, with different age groups. Outcomes show that such interventions play a role in developing self-esteem, in mood repair, and in enhancing feelings of safety and competence, which can play a role in more successful academic performance.

With children under 18, offline structured art therapy group programs were implemented in school settings. Results were measured by qualitative interviews and feedback from students' social environment or clinicians. Feedback shows that students calmed down, gained more self-confidence, gained a clearer self-concept, and more social acceptance in peer groups as a result of the art therapy group program.

University students underwent an individual art therapy based online self-help intervention program (combined method of visual creation and reflective writing) where data was gathered from self-report questionnaires. Qualitative analysis of participants' feedback reported mood repair, stress relief, insight, and empowerment through reflective art making.

Therefore, we have found that even a structured self-help format can serve as a preventive tool for young adults in struggling times.

Keywords: art-therapy, educational setting, prevention, intervention, re-scripting of the image, reducing negative mood, enhancing control, and feelings of worth and safety

1. INTRODUCTION

Limited short term art therapy (LST-AT) has gained recognition in the past few decades. It was established and researched primarily in those countries where the national health system recognizes art therapy as an evidence based treatment option. Most of the time, marginalized groups, foundations, and public schools run such programs to aid the participants. These programs have well established structures and focus on specific areas of the individual's life: trauma protocol, fostering studies or communication, reducing anxiety, and so on. Time-limited Art psychotherapy (ed Hughes, R., 2016) offers not only an introduction into art psychotherapy for clients, but often aids assessment, fostering a focus on individual topics and giving relief in crisis. Brief art psychotherapy is a complex method in which theories of cognitive therapy, mindfulness techniques, and mentalization each play a role. Gillian Solomon (ed Hughes, R., 2016) introduces Kolb's learning circle (Kolb,1984) to highlight the main components of art making experience as consideration of practical meanings and implication. These components include imaginary experience, observation of sensory components, emotions awakened by the image, reflecting on the content and

process, and planning. These processes are also parallel to cognitive restructuring and evaluation of a life event. LST-AT not only has effects on emotional processing, but also on life management and cognitive focus, and therefore is also indirectly good for learning skills such as attention, memory, and structuring of materials.

The short programs introduced below were designed for different age groups and different session sequences. Each program was designed to play a role in improving emotional regulation, particularly in reducing anxiety, developing self-concept, and in the case of children, fostering social relationships among peers. Although these programs are quite different, there are a few specific common components.

The first common component is *re-scripting of the image* (Arntz, 2012 in Solomon ed Huges, 2016). This technique offers the possibility to experiment with an emotionally saturated image, in order to make changes for betterment.

The re-creation of an inner state or memory in this way often reveals possible solutions or change for the benefit of future outcomes. This technique, which is similar to cognitive reframing, allows the client to see life from a wider perspective, and when used in a pretend mode with the ability to try things out, acts to moderate affects and behavior. As may be seen from our examples, it usually helps children and young adults in non-clinical educational settings with emotional and cognitive regulation.

The second common component is *hidden implication* (Varga, 2011). Hidden implication, in combination with other suggestive elements of art-making instructions, refers to recognition of personality; interest in the other person's inner world, feelings and thoughts; trust in one's abilities, strengths, and coping skills, and also addresses personality development, regardless of the setting. As these short programs do not fulfill the role of a long therapy, rather than analyzing participants, they often aim to strengthen participants using soft skills and a focus on positive affirmations.

Lastly, the third common component is the use of *symbols*, or themes which contain collective knowledge, and which can be projective surfaces for, or containers of individual memories, emotions and thoughts. Making images is often a container for the creation of individual symbols as well. Whether it is the whole or only a part of the image, the symbol holds opposing emotions and is capable of handling emotional ambivalence (Machioldi, 2011).

In the following we are going to have an insight for these three dimensions in the structures of the programs and the reflection of these beneficial ingredients in the results of the interventions. Therefore, our aim is to highlight these key components, which will support art therapy practitioners and other professionals working in educational settings, as they develop future time limited personality development-focused art therapy interventions. We believe that, because of its nonverbal affective activity and its ability to materialize supporting images of the inner and outer realities, which have the capacity to become transitional objects (Winnicott, 1971), art therapy is an especially effective method.

SHORT TERM ART THERAPY PROGRAMS IN DIFFERENT EDUCATIONAL SETTINGS

2. PROGRAM 1: HEARTS AND HANDS PROGRAM^{1,3}

2.1. Description of the program

The Hungarian Art Therapy Association (MMT), under the auspices of the national oil company's (MOL) Child Healing Program, conducted a 12-session program for more than ten years. This program served elementary school children struggling with anxiety, who were living in segregated villages mainly in Southern Hungary. Because of a lack of time and finances, a 12 session program was developed to reach out to these children, with the goal of strengthening their self-concept, self-esteem, social connections, communication skills, and emotional regulation skills. The program was introduced at the International Art Therapy Conference in Bratislava in 2017, and was published in the newsletter of the Slovakian Art Therapy Association (Valachiné, 2016 Zbornik, III. Od múzy k psuche).

The Program offered school-based supportive art therapy for children from grades 1-4, who were living in the countryside, who were struggling with anxiety, socialization problems, or emotional problems, and who were bearing an existentially difficult family background. Because of the relative segregation of these pupils, it was doubtful that they could get psychotherapy, or their teachers would be familiar with their emotional and mental state. Because of these factors, the therapeutic aim was longer assessment and support through AT. The framing was to give an experience that imparted satisfaction, feelings of success, and provided the possibility of emotional projection, techniques that not only serve as methods of creativity, but which provide an opportunity for healing through symbols of the unconscious.

2.2. Methods

The program was facilitated by one AT therapist in a small group. At the end, there was a consultation with the teacher or school psychologist about whether to continue. The program had a thematic line (12 sessions), based on the katathym imaginary pictures. It was developed by German psychiatrist Hans Carl Leuner (, based on his research in guided mental imagery, „katathymic influences" (KIP: the interaction of mental contents and emotional processes), dreams and daydreams.

Because of their openness, children can call out images simply through meditative drawing, without requiring an altered state of consciousness. The themes, related topics, and therapeutic aims can be seen in Table 1 (Valachiné, 2016).


KIP basic symbols such as the meadow, the spring, forest, mountain, and house were supplemented with other symbols which were considered to reflect well to children’s mental state (such as tree, flower, treasure, fairy). From the reflections upon the symbol or image, it was possible to draw conclusions about attitudes, expectations, wishes, fears, and needs, as well as attachment to the group and process. The group sessions started with a check-in discussion and a warm up activity, which was often from another art modality, such as music, drama, play, or movement. The KIP part happened with slowly guided drawing, or in the case of older children, short relaxation and imagination. Re-scripting of images played a key role in the art-making and understanding of individual imagery.

2.3. Results

At the end of the 10th year of the Child Healing Program, The Új Europa Foundation (Foundation of MOL responsible for executing social actions such as Child Healing Program grants) conducted a qualitative analysis (Bakó&Tolvaj, 2018) to measure the effectiveness of the program, This qualitative analysis consisted of a focus group of professionals, interviews, and self-report questionnaires for volunteering parents and educational institutions. The outcomes were outstanding: 92% of the participants reported that children loved to participate in the sessions, 89% reported development or symptom reduction of the child, and 92% would offer the programs for others as well. On a 5 point Likert scale, parents rated the change of their children above 4,5 in a positive valence for most questions regarding educational development, social interaction, and emotional equilibrium.

The program was rich in the use of symbols and positive affirmations as suggestive elements, and re-scripting in active imagination.

Table 1. Hearts and Hands Program¹ Elementary School 12 session theme- Table 1 (Valachiné,2017)

<i>session</i>	<i>symbol</i>	<i>Dynamic meaning</i>	<i>act; re-scripting of image</i>	<i>Symbolism of act</i>
1. tree of emotions: the focus on distinguishing between emotions, playing with forms and colors. Use of symbol of the tree; suggestive elements of personal meaning in colors reassuring children. Positive affirmations on strength of tree and diversity of emotions validate experienced emotions.	tree 	Axis of personality, improvement, heritage, wishes	Grow, reach out vertically	confidence, rooting, stability, and grow

2. emotional scribble and barometer



Emotional doodle is a decoding ones' own individual drawing style, emotional states, tensions and expressing it in drawing. Everyone gets a folded paper and in each part is an emotion that you have to express only with the curves, speed and intensity of your pencil. At the end of the session you can play with the emotions drawn, using them as notes for playing music, or making a montage from them as an emotional barometer. Key words: Utilization of previous art making as connecting visual markers to emotional mapping, playfulness, introduction into free art.

3. Splotch, image, story



The task is to integrate visually expressed emotions, to image and to add a narrative background and a story to it. Using dense paints, folding, or pressing papers, creating patches, splotches. Then choose a few and complete it to something meaningful. Then the group writes a story of it as it would be a filmstrip of a tale. Here the abstract turns into a meaningful "gestalt" with personal valence and at the end as an element of group work. Hidden implications are "find your own personal importance than accommodate to the social field". Key words: working in a group, find your inner pictures, find your story, cooperate, integrate

4. Symbolic play Flower and gardener



Flower	Ego image, Symbol of the passive, reflective personality parts	Grow, blossom, seeking for recognition, life and death, rebirth→ self esteem Self-help, healing
gardener	Temperance, tolerance, patience	Nurture, take care


In the psychodramatic play: one child is a seed of a plant covered by a blanket, resting in the soil, the other is the gardener taking care of the plant. While the gardener looks after the plant, the flower grows. Nurture, safety, gentleness, rest, peace these are the focus points of the experience. After the play, a slow meditative drawing comes with instructions on what to observe in your experience: roots, leaves, flowers, environment, weather around you, what was pleasant, what was bothering. Key words: changing perspective caregiver-caretaker; sensory experience, preverbal experiences.

5. Meadow




meadow	Mother existential field, safety, nurture	Find a place, take a rest	Presence and relaxation, self assurance
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Meadow: The task is to walk around, imagine a meadow, find a good place to take a rest (or in adult therapy find an object in the grass, or arrange a picnic) Changing viewpoints, what would you be in this meadow, a stone, a grass, an ant or a cloud, look around with the eyes of what you had transformed. Expression of the existential field, can show neglect, abuse, relationship towards the mother. The active imaginative task to "find a place to rest" gives back control, and competence.

6. Forest and finding shelter in the storm 	forest	unconscious	enter	open	hand paints or clay or some textile, yarn or wool
	animal	Instincts, spontaneity, strength, impulsivity	Live and hide	Control, self protection	we make masks for the animal figures
	storm	Conflict, anger	Externalizing making the storm acoustically	inner tension	visually or


Forest and shelter: The session starts with a dramatic play of walking in the woods, and transforming into an animal, imitating its movements and sounds, and how it lives. But suddenly a storm is coming, look for some hiding place for yourself. Storm is often a symbol of anger, the re-scriptive part is the active imagination of finding calm and shelter. It is materialized often as a cave or house, but is rather the capacity to imagine safety in threat that is the real value of the exercise.

7. Spring or river 	river	Energy flow, lifeline, libido, sexuality, flow and waves of emotions	Follow from source to firth	Find energy, inspiration, creativity	Water based paints
	Architects	Obstacles, blocks, connections	Observe, remove, clean	Remove emotional blockage	

The original KIP symbol uses the spring but we found that most urban children can connect to the image of a river more easily. We start with meditative drawing with slow instructions: Imagine a river from the source, the spring till the sea. We use VAKOG (visual, accustic, kinestetik, olfactory and gustatory formal experiences and suggestions to make imagination vivid). Spring is also a symbol of life force, that gets focus and reassurance in this exercise. Joining forces as a visual big river and as in the process of group work has sensory-kinesthetic, emotional and cognitive benefits.

8. Mountain and treasure 	Mountain	Father, authority, achievement, work, study Superego symbols	Climb up look around and walk down Vertical movements in the psyche	Change view point, imagine success	Dense paints or clay
	Treasure	Inner positive self parts	find	Explore your unused strength	

Mountain is the symbol of achievement, efficiency, relationship with the authority and Father. Climbing a mountain is making effort, for some it is extremely hard, for some it is easy. We are different in the ability to enjoy what we achieved, whether we can take a rest on the top and feel satisfied by watching the view, or some might be frightened at the top. Mountains often hide treasures, and of course we expect the world to honor our work efforts, with the symbol of the treasure we awaken these feelings. Re-scripting is hidden as the treasure in the mountain; it suggests that it worth to combat your fears and uncertainties.

9. Travel to the fairy 	vehicle→ balloon (fire, air)	Uplifting Thought and courage, enthusiasm	fly	Move out of comfort zone	Any art even paper mache
	Fairy, witch, magician	Archetype of inner helper	Make wishes	change, think positively, let go old wounds	Montage, textile, body image drawing, mirror techniques

Fairy: Meeting the fairy is the meeting the ideal Selbst, the inner helper. In this play we make little balloons to fly up to the fairy. We make and decorate the fairy together, boys are often knights protecting the way. At the fairy you can leave three wishes, and also things that you would like to leave behind. Also it is close to saying goodbye, and through the fly to the fairy we can look at our previous lands: meadows, rivers, mountains. Reframing is to "see from above"; and in the psychodramatic play giving the waste or unwanted and formulating desires all are also acknowledge authenticity of the child.

10. tree of abilities (in group work) creating together, acknowledgement to each other. List of strengths and abilities. Looking at ourselves as a group. Utilization of former group experiences. Giving and receiving positive affirmation, ego-strengthening.

11.-12. Working with families and parents



House, village	Safety, body, home, family, civilization	Build	Represent, reflect and respect your own and personality and others'	any kind of paint montage
Mandala, water crystal	Totality, oneness, Selbst, spirit	Have a good wish or complement out	Strengthen the attachment in an	

There are one or two but at least the last session is open, and parents can play and create with their children. Themes often used: painting a house and a village, mandalas, or water crystals based on the „Wisdom of water” book, painting for music, Winnicott doodle play. It is a time when parents and families can get familiar with the art therapy atmosphere and can see their children in their free and creative way.

3. PROGRAM 2: 5 MINUTE ART PROGRAM^{1,2}

3.1. Description of the program

Similar to the MOL Program, a short grant from Tiszta Formák Foundation made it possible to make a week-long intervention program for High School Teenagers struggling with behavior issues and family hardships. The program was offered once in selected high schools in the XIII and in the X district of Budapest. Our framework served to help release tension, and to gain self-worth and autonomy for those teenagers who entered into our group. We had 10 sessions in the beginning of the summer, each session consisting of two parts: one in the morning and one in the afternoon.

8-10 participants were recruited by psychologists at each school. According to the assessment phase, they showed: emotional and behavioral disorders, and inhibited emotions in terms of quality, strength, durability and expression. Self-centred thinking was predominant (i.e. they were strongly influenced by their emotions and thus limited in correctly assessing reality) and their cognitive control was impaired. Their experiences of time were narrowed: they had lost their past and rejected their vision of the future - they only lived in the present. Their studies were strongly influenced by their emotional state. They focused their self-power on maintaining psychic balance and repression.

3.2. Method

The art therapy concept of the program was based on gesture painting, which was taken from the fine arts. In gesture painting, on the one hand, spontaneity, erupting tensions, and emotions play a major role, which can be nurtured and enhanced by psychologically dissolving any resistance to the work. On the other hand, abstract art making often helps to enter into a regression serving the Self (Kris,1952), as an aid in returning to early modes of reaction (Stern, 2010), and to the vitality affect, when the experience of emotions and the attunement to one another is formed by rhythm and by perceptual patterns. We use visual and acoustic art techniques that resonate with and reflect the emotional state of the creator, giving the opportunity to project inner reality and to translate it into creation. The techniques create non-figurative, abstract works of art that require no prior drawing skills or knowledge, only the courage to dive in. A main topic of the program was recalling a memory of a solved problem (a

model of personal re-scripting) with real size body schemas, and postural and emotional contents. The creative works were exhibited in the school, and gained peer recognition in many ways.

The themes of the 10 sessions can be seen in TABLE 2.

3.3. Results

In both cases, we found that students experienced improvement in both grades and social inclusiveness within their class. Clinicians reported betterment in self-reflection and self-esteem (examined by interviews, not psychometric data). This program was influential mainly because of re-scripting and suggestive components, although in looking at the program, it is clear that there were sessions dedicated to creating individual symbols, as well.

Table 2. 5minute ART Program^{1,2} (Valachin&Pócza,2017)

TABLE 2 10 week sessions for High School Program	
Themes	Methods
1. Who I am and how I am seen	Bird's nest, flower (Symbols of ego and family, existential field, images of being nurtured and protected).
	
2. My roots, my skills, what I carry with me	Mood barometer (Identifying and differentiate between emotional states)
	
3. My wings, my desires, what are my potentials	Ex-libris design (Creating personal symbol of the self)
4. My creativity, the creative force within me	Common landscape , forest, symbol games - river, treasure - KIP Leuner pictures (one-or two creation fits in the time, all share the common work frame

from individual to group work. Hidden implication:
Be yourself- AND acknowledge others, be social”

5. My failures, disappointments, small faith, what keeps me going when I get discouraged

Temper figure (2 page. postural body image). Major focus of the work is to help children be conscious of their own strength, and capability: (in sensory, emotional and narrative integrated way).

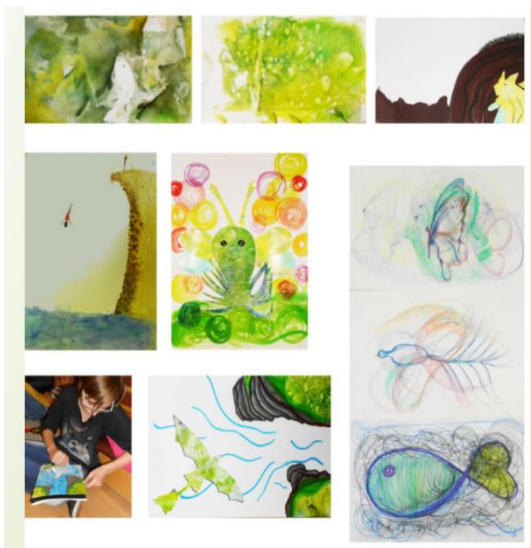


6. Relationships, friendships, who I can rely on

Illustration of a quote of your choice, this is a narrative symbol of personal values that we adjust visually. More cognitive work and mentalization are required.

7. When we fight.... conflict resolution

Magical creatures - ink techniques - relaxation techniques. Hidden implication “with strong self.knowledge you are not afraid to play and face your imperfection”.



8. Getting my calm back, what is relaxation for me

Illustration of life path. Integrating previous experiences, sharing reality with group.

9. Getting on the road, safety, dangers, asking for help

Making talismans - for each other (felt, pebbles). Giving and receiving positive affirmations, preparation for ending.

10. closing time, what I've learned, what I'm taking with me	Closing musical improvisation - non-figurative painting of experiences.
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4. PROGRAM 3. : ARTS AND RESEARCH ONLINE PROGRAM IN THE PANDEMIC FOR UNIVERSITY STUDENTS^{1,4}

4.1. Description of the program

The first author of this article intended to measure effectiveness and processes of art therapy in emotional regulation (improving emotional flexibility). The pandemic abruptly shifted this intention into a research task with practical intervention. Qualitative study explored how online individual art-therapy based (ATB) self-help tasks could support international students during the COVID 19 pandemic. 7 online tasks, including art-making and reflecting writing, were created and administered via google form. The qualitative analysis of art themes, along with the written texts, were used to understand how online tasks may be helpful for students to adapt to current situations.

4.2. Method

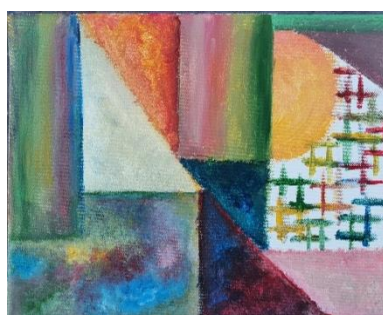
The program consisted of a seven week task series, listed in TABLE 3. The task followed a progression of non figurative art to more figurative art; simple instructions focusing on one feature of creation; emotion expressed in color and line; and a projected theme in a blot - all the way to more complex notions, such as safety and transformation. Through the instructions, participants were encouraged to find personal symbols and meaning, and in the writing task, they were encouraged to search for insight and inner sources. Instructions and reflective questions were formulated in such a way that they contained hidden implications of self-support and coping.

4.3. Results

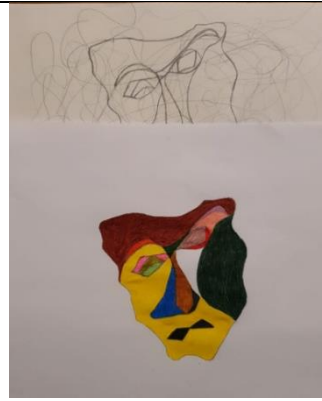
Qualitative analyses demonstrated that completing these tasks imparted either calm or strength as a source of self support for the students (Valachiné et al. 2021). Emergent themes included: 1) frustration of isolation, 2) loss of control and uncertainty, and 3) support (nature, transpersonal, attachment). Most of the tasks of ATB contained re-scripting of the image. Additionally, results showed both increased feelings of control and of emotional betterment. Implications of the study include preliminary evidence that ATB self-help tasks may be a source of coping, by externalization of tensions and reinforcement.

Table 3. Arts and Research Online Program in the Pandemic for University Students^{1,4}

COLOR TASK A Mondrian-style image was created to express current emotions with colors. In modification a color was changed to bring up different memories, moods and personal strength. Working with color wheels, and personal colors frequent techniques in therapy and assessment (Machioldy 2011; Haeyen 2018).

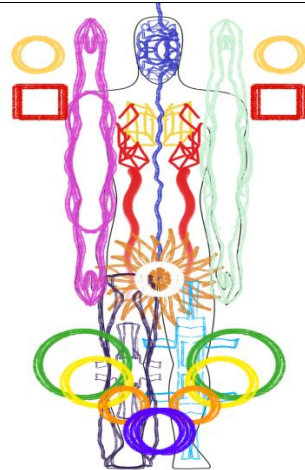


SQUIGGLE TASK In this method for expressing primal emotions, externalizing tension we asked the participants to project a creature into the chaotic lines. In the facilitative part of the task, this creature was taken to an imagined safe place (which exercise is known from different art therapy (Chilcote, 2007) and imaginary (Lipsenthal, 2004) approaches.



OBJECT TASK Participants graphically introduce- as a mindfulness technique (Abbing et al, 2019) an object from their surroundings to represent them with environment where it belongs, and feels the best to them. Objects that people relate to, that have personal significance, are also rooted in a narrative of identity and serve as a container of personal memories (Düll, 1996) and emotional resources.

AVATAR TASK Somatic feelings were, represented with colors and symbols in human figure. Body image was chosen as a reference frame for inner feelings (Machioldi,2011) to represent the possibility of dialogue between the self and the environment.



BLOT TASK Liquid paint (or a coffee splotch) blots were used as projection to create an object, and place it to positive-negative scenes. Cognitive and emotional shifting exercise used scenes as bounds of emotional or value continuum. Participants later focused on strength to move along the positive trajectory. The continuum ide was a visual expression of emotional regulation process, recent personal theme.



SAFETY TASK Easing rising anxiety of COVID-19 we asked participants to make a collage on personal safety concept. Even when approached symbolically, imagining a safe place helps to down-regulate anxiety (Gerge, 2018).BLOT TASK Liquid paint (or a coffee splotch) blots were used as projection to create an object, and place it to positive-negative scenes. Cognitive and emotional shifting exercise used scenes as bounds of emotional or value continuum. Participants later focused on strength to move along the positive trajectory. The continuum ide was a visual expression of emotional regulation process, recent personal theme.

TRANSFORMATION TASK gave an overview of lockdown and process for participants. They visualized their transformations and changes in the past weeks, using any technique of their choosing. This task helped participants observe this lifetime, focus on their capacity for change and adjustment during the pandemic.



5. CONCLUSION

Time Limited Art Therapy or Brief Art Therapy is a method that can be used with different age groups in educational settings. The effectiveness of such a technique is up to the symbols used the hidden implication or suggestions of the instructions of the creative work and re-scripting, betterment instructions images. If we look closely at the curriculum of all programs, we can see some common design elements as well, one is to start with effortless visual plays, colors ,squiggles, blots, gestures that do not require art skills, just playfulness and some curiosity. At the same time all these abstract elements get personalized and connected to individual meanings: emotions, values, notions. Individual works always run into symbol work, which in contrast the beginnings: when emotions are being distinguished and identified; symbols rather contaminate and condense different personal and collective meanings. Symbol work also implies some imaginative act, modification in visualization and in the artwork as well, changing perspectives, building new parts, finding, zooming in to some parts of the inner (outer) image. The symbols as they most often hold collective wisdom gently maneuver the participants into group work. Introducing them the duality of being individual (accommodate to your inner self) and also adjust to social field. Reassurance, sharing, making gifts or over viewing the session process are the closing parts which focus on integration and implication to life what has been learned and experienced.

However evidence is scarce it is shown that mood regulation, attention and self-concept can be modified with such interventions. With a more balanced affective system educational outcomes or academic achievements are expected to increase as well. Social inclusion of the participant especially in elementary school and improving communication skills must be highlighted as well. Further implication

Class teachers, school psychologist, social workers in education can easily collaborate with art therapists in the future to help to design and maintain such sort programs. Art therapy programs can aim and address many different areas in education: improving acceptance, communication and empathy, activation and group forming in a class, developing attention, or deepen understanding of a topic by personal involvement into arts. We assume that time limited group art activity or group art therapy might play a key role in future education programs.

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Review of Higher Education for Students with Hearing Impairment in China

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Abstract

In order to promote the development of higher education for students with disabilities in China and provide some useful information for future research. This article followed evidence-based research path to search and screen the relevant literature of higher education for students with hearing impairment, then analyzed the 49 targets literature from the trend and distribution of research, school running system, support and employment status four aspects. Result shows that the number of relevant literature is insufficient and the distribution of publications is uneven; there are several paths to enroll in higher education for students with hearing impairment, but the scale of enrollment, the breadth of majors, and the education methods and teaching approach can't meet their development needs; it is difficult for the students with hearing impairment who received higher education to find a job and keep it by themselves; there is insufficient financial, academic and employment support for students with hearing impairment who study in universities or colleges. In general, the higher education for students with hearing impairment needs more support from education institutions, government and social to create a better environment for study and work.

Keywords: Higher Education, Education for the Students with Hearing Impairment, China

1. INTRODUCTION

Higher education is an important part of the education system. The Higher education for the people with hearing impairment is the largest component of higher education for the people with disabilities in China (Liu, Liu, 2013). There are approximately 27.8 million people with hearing disability in China, ranking first among all types of disabilities (Xinhua News Agency, 2011). In 1987, with the establishment of the Special Education College in Changchun University, higher education for the people with disabilities slowly began in China. So far, there are less than 30 colleges and universities that admit people with hearing impairment, and its proportion is less than 1% of all colleges and universities in Chinese mainland. Therefore, the people with hearing impairment as a representative group of people with disabilities in China, understanding their current situation of higher education from different aspects and the trend of related researches will not only help understand the quality of higher education and promote the development of higher education for people with disabilities in China, but also serve as a basis for future research and provide some useful information.

2. MATERIAL AND METHOD

The purpose of this research is fully understand the current situation of higher education for the people with hearing impairment and the trend of related researches. Specific aims are as follow:

1. The trend and distribution of related research;
2. The school running system of the higher education for students with hearing impairment;

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- 3.The employment status of students with hearing impairment who study in universities or colleges;
- 4.The support for students with hearing impairment who study in universities or colleges.

In order to achieve these aims, this article used CNKI (China National Knowledge Infrastructure) as the platform for literature search; followed the path of evidence-based research to search and screen the literature; used “hearing impairment”, “deaf” as the main searching key words to randomly match with “higher education”, “university”, “college”, “support”, “employment” , and connected them by the the Boolean operator“AND”. All of the search was in abstract, title and key words with no time limitation, and carried out in October 2021. Languages was limited to Chinese. Besides, in order to get qualified literature, the source of journal was limited in core journals.

After finished the search of literature, the results of search were going to match with the inclusive criteria and exclusive criteria to screen the literature and get final results for analyzing.The inclusive criteria and exclusive criteria are as follow:

Inclusive criteria: 1. The researches are relevant to specific aims of this research; 2.The participants or objects of the researches are individuals with hearing impairment;

Exclusive criteria: 1. The participants or objects of the researches have other physical impairments or neurological diseases besides hearing impairment. 2. The education is not study or discuss the students with hearing impairment who study in universities or colleges of Chinese mainland.

As shown in Table 2.1, using the searching strategy, a total of 456 articles were obtained. After matched the corresponding inclusion, exclusion criteria, and eliminate the repeated literature, 49 target articles were obtained.

Table 2.1 The Information of Literature Searching and Screening Results

Databases	Main key words	Matching key words	Search results	Final results
Core journals in CNKI	Hearing impairment; Deaf	Higher education	37	49
		University	197	
		College	36	
		Support	136	
		Employment	50	
Total			456	49

3. RESULT

3.1. The Trend and Distribution of Related Researches

As showed in figure 3.1.1 and figure 3.1.2, scholars' attention of higher education for students with hearing impairment began in 1997. Before 2015, there was an upward trend year by year. Most of articles were published between 2011 and 2015, it is nearly half of all related articles. Besides, more than half of articles were published on the Education and Vocation, Chinese Journal of Special Education, Education Exploration and Theory and Practice of Education four journals.

Figure 3.1.1 The Trend and Publication of Related Researches

Figure 3.1.2 The Distribution of Related Researches

3.2. The School Running System of Higher Education for Students with Hearing Impairment

In order to get the information of the school running system of higher education for students with hearing impairment in China, the literature was analyzed from enrollment path, enrollment scale and major setup, curriculum, teaching approach four aspects.

Multiple and fair enrollment paths are effective means to ensure the educational right of groups with special needs. As far, students with hearing impairment can get the chance of higher education by three ways. First, enter some special colleges or universities by an independent enrollment and study in a faculty or major of special education; second, enter some general colleges or universities by a nationwide unified examination for admissions to

general universities and colleges, and study in some limited majors by learning in regular class; third, get a degree certificate by finishing the education from evening university, open university, correspondence or self-taught (Liu, Liu, Li, Yao, 2018; Ma, &Sun, 2012; Lv, 2004; Wang, 1997) . The first way is the main way for the students with hearing impairment to get the chance of higher education (Liu, Liu, Li, Yao, 2018; Han, Lu, Li, 2010). With the development of higher education for people with disabilities in China, the opportunity of higher education for persons with disabilities has been increasing year by year, basically meeting their needs for higher education (Ma, &Sun, 2012, as cited in China Network Television, 2011). However, most of the higher education for students with hearing impairment has taken a way of centralized training and isolated placement from healthy students, so that the students with hearing impairment are in a marginal position in the Chinese education system (He, Guo, 2015).

Researches have shown that the enrollment scale of higher education for the students with hearing impairment is too small and the majors are too narrow to meet the needs of student development (Jiang, Wu, Lv, 2018; Ma, Miao, 2003; Meng, 2008). As far, there are 24 colleges and universities admit students with hearing impairment by independent enrollment (Chen, 2020), and only a few of them provide postgraduate education for students with hearing impairment. As for the major, students with hearing impairment have very limited choice for their majors in colleges or universities (Mudgett, Decaro, Liu, 2007). There are around 20 majors including computer application, computer science and technology, animation design and production, art advertising, pornographic art, advertising design and production, clothing design etc.(Ma, &Sun, 2012). Nearly all of their majors related to computer or art because of their physiological characteristics, but not all of the students with hearing impairment are talented or interested in art or computer (Li, 2008; Liu, Liu, 2012).

In order to help the students with hearing impairment to master professional skills and knowledge, to improve professional ability, ability of thinking and comprehensive quality, a series of compulsory and selected courses are offered by colleges and universities, but most of colleges or universities establish a curriculum system which centers on vocational ability training (Wang, 2009; He, Guo, 2015). The offered courses are similar with general universities, emphasis on skill training, while the curriculum for developing core abilities of profession and thinking, communication skills and social adaptation psychology is insufficient, structure of curriculum is chaotic too (He, Guo, 2015). Only a few colleges and universities offered featured course for the students with hearing impairment to understand themselves and society better, improve their writing skills, communication skills, survival and competitiveness (Wang, 2009).

Effective teaching approach is the foundation of successful education. For a long time, higher education for the students with hearing impairment has adopted the traditional teaching model which centered on classes, teachers and books (Li, 2004). In traditional higher education for the students with hearing impairment, there are three teaching approaches. First, sign language is the main approach of teaching; second, teacher cooperate with a sign language interpreter in class; third, written language is the main approach of teaching (Tong, 1999). Due to the students with hearing impairment lack of hearing and speaking ability, and a lot of substandard sign language is using by teachers, it has caused severe challenges to the students' study and daily life in campus (Chen, 2019; Li, 2013). With the development of internet technology, network technology has the characteristics of strong vision and strong interaction and can meet the needs of students with hearing impairment better (Li, 2004). Under the background of the Internet, the teaching, management and social adaptability of higher education for the students with hearing impairment can be promoted effectively, and realize the integration better (Jiang, Wu, Lv, 2018; Li, 2011; Chen, 2021).

3.3. The Employment Status of Students with Hearing Impairment who Study in Universities or Colleges

Students with hearing impairment who study in universities or colleges are outstanding talents in the deaf community. However, due to hearing impairment, there is a big gap between students with hearing impairment and healthy students in terms of basic skills, thinking skills, personal qualities, career decision self-efficacy, and interpersonal skills (Zhang, 2018; Tong, Chen, 2012). Their employment status reflects the educational effectiveness of people with disabilities, and the society's acceptance to the people with disabilities.

Due to the students with hearing impairment who study in universities or colleges have communication barriers, weak sense of teamwork, unclear occupation positioning, low social practice ability problems etc (Han, Yuan, Jia, 2012; Zhang, 2011). It is an indisputable fact that it is difficult for students with hearing impairment to obtain employment (Tong, Chen, Yao, 2011; Tong, Yao, Chen, 2012). The number of people with a higher education among the people with disabilities who have a job is tiny in China, accounting for only 1.1% of the total number of people with disabilities who have a job (Han, Zhang, Wang, 2013).The employment rate of students with hearing impairment is not ideal (Gao, Ma, 2016; Tong, Shao, Zhang, 2014). Research shows that the employment rate of students with hearing impairment who studied in universities or colleges is around 60%, which is lower than the 73%

of general universities or colleges (Qing, Zhou, 2006). More seriously, more than half of the students with hearing impairment who studied in universities or colleges relied their parents or friends to find a job. Only a few of them can find a job by themselves (Qing, Zhou, 2006; Li, Zhao, Wei, 2012). Besides, the job stability and income of students with hearing impairment who study in universities or colleges in employment are poor (Han, Zhang, Wang, 2013; Qing, Zhou, 2006;). Students with hearing impairment have nowhere to ask for help when they meet difficulties in their work, and it is also common to encounter discrimination (Li, 2004).

3.4. The Support for Students with Hearing Impairment who Study in Universities or Colleges

As a group with special needs, students with hearing impairment need some special support to have a barrier-free environment. This article analyzed the support for students with hearing impairment who study in universities or colleges from financial, academic and employment three aspects.

The cost of higher education for the students with disabilities is relatively high, which is generally considered to be 4-5 times of general higher education from an international perspective (Ma, &Sun, 2012, as cited in Ji, 2012). As the capital of our country, Beijing's politics, economy and culture are at the leading level in China. Its funding for higher education for the students with disabilities has reached 30,000 ¥ per student per year, which is 2.5 times of general students in universities and colleges (Ma, &Sun, 2012, as cited in Beijing Municipal Committee, 2011). Since the average cost of students with hearing impairment in Chinese universities or colleges is not clear, the government has no reliable basis for determining the amount of financial allocation. The amount of government financial appropriation can only be set on the basis of the per student funding for healthy students and based on the regional economic development. As a result, the funding for higher education of students with hearing impairment in each region is uneven (Tong, Sun, Yao, 2013). All of the researches showed that the financial support for students with hearing impairment who study in universities or colleges hasn't reached the international standard, but China's education funding has shown an upward trend year by year (Ma, &Sun, 2012; Tong, Sun, Yao, 2013).

Higher education for the students with hearing impairment in China is in its infancy period and cannot provide barrier-free services for them. As for the academic support, it always shows on the using of multimedia teaching aids and after-school text communication, and a teacher serves as a sign language interpreter while teaching, although the teacher's professional level of sign language and such teaching approach are doubted (Li, 2011). With the increasing of funding from government and development of internet technology, intelligent tracking system and wireless dynamic language training system will be used in the classrooms which service more than 50 students, to help students and teachers' language convert into visual information better, to develop the training of hearing and speech convenient (Tong, Zhang, Zhou, 2014). Besides, researches show that the using of game teaching method, internet technology, body language, interesting instruction, international sign language summer camp, and emphasis on language education can promote the study effectiveness of students with hearing impairment who study in universities and colleges (Bai, 2009; Wu, 2017; Li, 2004, Gu, 2012; Xu, Shang, 2018; Yu, 2004; Gu, Qu, 2013).

On the basis of the country's promulgation of laws to protect the employment rights of persons with disabilities (Han, Yuan, Jia, 2012; Tong, Cao, Kang, 2008), the support for students with hearing impairment who studied in universities or colleges in the employment process mainly comes from their families (Li, 2004). The support provided by universities and colleges to students with hearing impairment is reflected in five aspects. First, publicize information of recruitment on the campus network; second, actively contact with employers and provide opportunities of internships and applying for jobs to the students with hearing impairment; third, hold extracurricular employment seminars; fourth, establish internship and practice bases; fifth, provide paid internship opportunities (Han, Lu, 2010). However, students with hearing impairment do not know enough about the employment information on the campus website, they urgently need more detailed recruitment information and employment guidance (Li, Zhao, Wei, 2012). Besides, researches show that group counseling, employment psychological counseling, reading therapy, normative archive management and social support can effectively improve the employment situation and mental health of students with hearing impairment who are study in universities or colleges (Yan, Jiang, Lan, Ding, 2021; Tong, Shao, Zhang, 2014; Chen, Du, Jiang, Zhao, 2019; Zhu, 2017; Yang, 2011; Tu, Dai, 2014; Yuan, 2020).

4. CONCLUSION

China's higher education for the people with hearing impairment starts late, scholars' attention of higher education for students with hearing impairment starts late too. The number of articles about higher education for students with hearing impairment is insufficient, and the concern has declined in recent years. Beside the distribution of related articles is unbalanced. Scholars should pay more attention to the higher education for the

people with hearing impairment from different fields in the further work.

China provided different paths to the students with hearing impairment to enroll in higher education, but the education approach, enrollment scale, major and teaching approach are difficult to meet the need of development for the students with hearing impairment. The more inclusive education methods, larger enrollment scale, more diversified major and more standard visual teaching approach are urgently needed by the students with hearing impairment.

Due to the inappropriate study environment, physical and cognitive characters of students with hearing impairment who study in universities and colleges, it is difficult for them to find a job and keep it by themselves. More effective higher education methods and barrier-free environment is important for the students with hearing impairment.

However, the current support from financial, academic and employment parts isn't enough for the development of students with hearing impairment who study in universities or colleges. In general, the higher education for students with hearing impairment needs more support from education institutions, government and social to create a better environment for study and work.

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Expert System for Student Evaluation Based on Ongoing Activity in The LMS System

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Abstract

The article deals with an expert system for student evaluation based on ongoing activity in the LMS system. E-learning and LMS systems contain a large number of different options for continuous assessment of student activity (progress tests, assignments, tasks, etc.). These activities are typically evaluated with the appropriate number of points, and the summary of all activities and their results is then the basis for the final evaluation of the student. However, the e-learning teacher must also include in the evaluation other aspects: the student's ongoing activity outside the e-learning system, late submission of assignments or tests, etc. We propose an expert system that, based on various input parameters, will be used to propose a suitable evaluation of the student. Based on these parameters, the expert system proposes the final evaluation of the student, and the teacher can then, taking into account this recommendation, give the final evaluation to the student. The knowledge base of the expert system contains a set of IF-THEN rules. The expert system is created using a special inference method called Perception-based Logical Deduction (PbLD) and a defuzzification method called DEE (Defuzzification of Evaluative Expressions).

Keywords: e-learning system, LMS system, evaluation, expert system, ongoing activities,

1. INTRODUCTION

Nowadays, there are many e-learning systems, and distance learning using e-learning systems is very popular. The basis of e-learning is the availability of such a system that allows access to online courses and materials to anyone and any time [1]. E-learning offers several advantages, such as the creation and organization of the course according to the specific needs and requirements of the target users (students) [2].

E-learning and LMS systems contain several options for continuous evaluation of student activity. For instance, the LMS system Moodle has these options:

- Progress tests with selecting one correct answer from several options
- Progress tests with selecting one or a few correct answers from several options
- Progress test with filling short answer
- Other types of progress tests
- Final test

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- Tasks after studying a specific part of the e-learning course

LMS system Moodle automatically evaluates results of tests (number of correct answers etc.). So the teacher can access the results of progress tests in the LMS system Moodle. But for the final evaluation of the student, the teacher must include the results of individual tests according to their importance, early or late submission of assignments, and the result of the final test. And this activity (final evaluation of student based on ongoing activity) should be quite time-consuming, and the evaluation should be subjective.

Based on these reasons, we propose an expert system for student evaluation based on ongoing activity in the LMS system. The proposed system will be demonstrated on the LMS system Moodle, but the system should be customized to other types of LMS systems.

2. METHODOLOGY

The proposed expert system is based on the general model for a decision-making process presented in [3]. A general model for a decision-making process was also used in papers [4], [5], [6], [7]. The structure of the proposed fuzzy tool is shown in Figure 1:

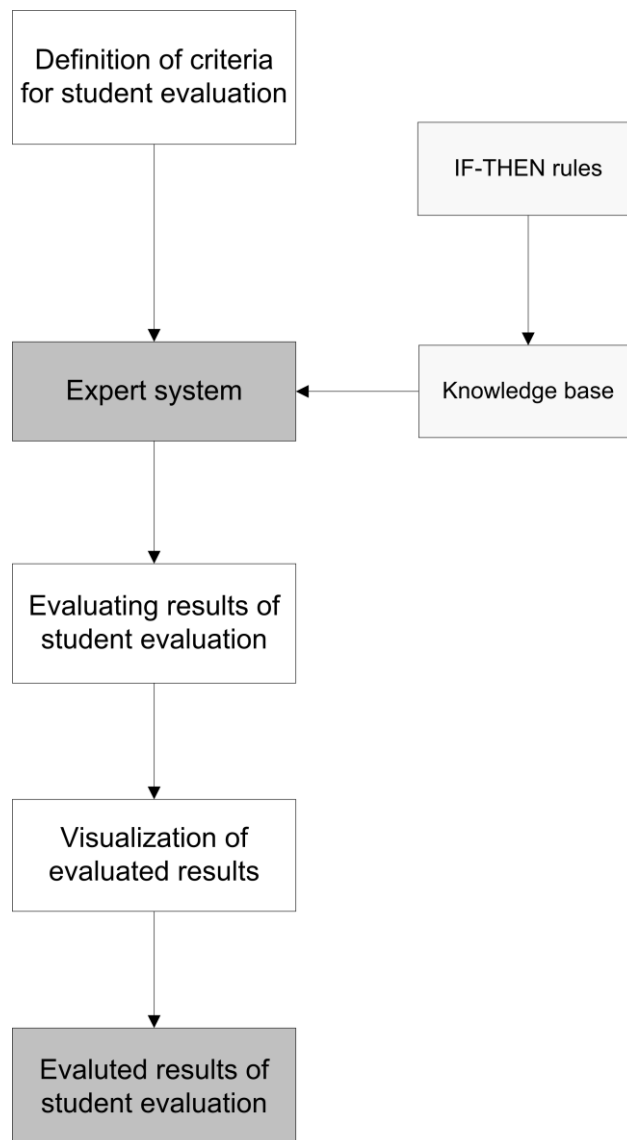


Fig. 1. Structure of the proposed fuzzy expert system for student evaluation

The main parts of the proposed expert system will be described in the following subsections.

2.1. Definition of criteria for student evaluation

In the first step, the criteria for student evaluation are created. The criteria should be updated or re-defined based on the type of LMS system. Based on these criteria, the specific rules of a knowledge base in the expert system will be created. Here are possible criteria for student evaluation in the LMS system Moodle:

- Overall results of important progress tests
- Overall results of other progress tests
- Overall results of tasks
- Number of late submitted tasks
- Results of the final test

First two criteria describe the results of progress tests. The teacher, during the process of creating tests, naturally considers some of them as more or less important. So, the first criterion indicates the overall results of important progress tests (marked as important). The second criterion indicates the overall results of other progress tests. The third criterion expresses the overall results of tasks submitted by a student in the LMS system. The fourth criterion indicates the number of tasks that were submitted after the deadline for the task submission. And the last criterion indicates the overall results of the final test.

2.2. Creating of expert system

Next, the expert system for the student evaluation is created. The knowledge base consists of IF-THEN rules which evaluate the criteria for student evaluation. The IF-THEN rules of an expert system are written in a manner similar to the linguistic formulation of rules in everyday life. We are using a special inference method, namely, Perception-based Logical Deduction (PbLD), which is a specific inference method working with the genuine meaning of evaluative linguistic expressions (such as "very small, more or less good, roughly medium", etc.) and is based on formal properties of a mathematical fuzzy logic. It was described in several papers [8] [9]. For this inference, it is specific that it is based on the local properties of the linguistic description. Consequently, a difference can be made between the rules, but at the same time, they can be dealt with as the vague expressions of a natural language. To obtain a specific conclusion, a special defuzzification method DEE (Defuzzification of Evaluative Expressions) must be used. We use the software tool Linguistic Fuzzy Logic Controller [10] to create and modify the fuzzy expert system. The structure of the proposed expert system is shown below.

Input linguistic variables:

- IMP_TESTS – overall results of important progress tests, possible values (very low, low, medium, high, very high)
- OTHER_TESTS – overall results of other progress tests, possible values (very low, low, medium, high, very high)
- TASKS – overall results of tasks, possible values (very low, low, medium, high, very high)
- LATE_TASKS – number of late submitted tasks, possible values (zero, few, medium, much, very much)
- FINAL_TEST – results of the final test, possible values (very low, low, medium, high, very high)

Output linguistic variable:

- OVERALL_EVALUATION – overall student evaluation, possible values (very low, low, medium, high, very high)

Here are a few examples of IF-THEN rules of the proposed expert system:

```

IF (IMP_TESTS IS VERY LOW) AND
(OTHER_TESTS IS MEDIUM) AND
(TASKS IS LOW) AND
(LATE_TASKS IS VERY MUCH) AND
(FINAL_TEST IS LOW) THEN
OVERALL_EVALUATION IS VERY LOW

```

```

IF (IMP_TESTS IS MEDIUM) AND
(OTHER_TESTS IS VERY LOW) AND
(TASKS IS LOW) AND
(LATE_TASKS IS FEW) AND
(FINAL_TEST IS LOW) THEN
OVERALL_EVALUATION IS LOW

```

```

IF (IMP_TESTS IS HIGH) AND
(OTHER_TESTS IS MEDIUM) AND
(TASKS IS HIGH) AND
(LATE_TASKS IS MEDIUM) AND
(FINAL_TEST IS HIGH) THEN
OVERALL_EVALUATION IS HIGH

```

```

IF (IMP_TESTS IS VERY HIGH) AND
(OTHER_TESTS IS HIGH) AND
(TASKS IS VERY HIGH) AND
(LATE_TASKS IS ZERO) AND
(FINAL_TEST IS VERY HIGH) THEN
OVERALL_EVALUATION IS VERY HIGH

```

In the first IF-THEN rule, the results of important progress tests are very low, and there are a lot of late submitted tasks. Other input variables are low. So the overall evaluation is very low. In the second IF-THEN rule, the results of tasks and of the final test are the same as in the first IF-THEN rule. But results of important progress tests are higher (medium), and there are only a few tasks submitted late. So the overall evaluation is low (higher than the overall evaluation in the first IF-THEN rule).

2.3. Evaluating results of student evaluation

In this step, the expert system evaluates the overall student evaluation based on defined criteria (results of progress test, tasks, and a final test) and the knowledge base of the expert system.

2.4. Visualization of evaluated results

Finally, the evaluated results are visualized and shown to the teacher of the LMS course. The results of the student's evaluation by the expert system are only recommendations for the teacher. The final evaluation of the student is then finished by a teacher.

3. RESULTS

The proposed expert system was verified on a few experimental students in the LMS system Moodle. The students have these results of defined criteria for student evaluation:

Student 1

- Overall results of important progress tests – 12%
- Overall results of other progress tests – 42%

- Overall results of tasks – 26%
- Number of late submitted tasks – 12 tasks (of 15 total tasks)
- Results of the final test – 25%

Student 2

- Overall results of important progress tests – 45%
- Overall results of other progress tests – 11%
- Overall results of tasks – 24%
- Number of late submitted tasks – 3 tasks (of 15 total tasks)
- Results of the final test – 27%

Student 3

- Overall results of important progress tests – 78%
- Overall results of other progress tests – 52%
- Overall results of tasks – 79%
- Number of late submitted tasks – 7 tasks (of 15 total tasks)
- Results of the final test – 76%

Student 4

- Overall results of important progress tests – 91%
- Overall results of other progress tests – 77%
- Overall results of tasks – 93%
- Number of late submitted tasks – 0 tasks (of 15 total tasks)
- Results of the final test – 95%

Then, the students and their results are evaluated by an expert system. The results of the evaluation are subsequently visualized and shown to the teacher. Visualization of evaluating students is shown in Figure 2.

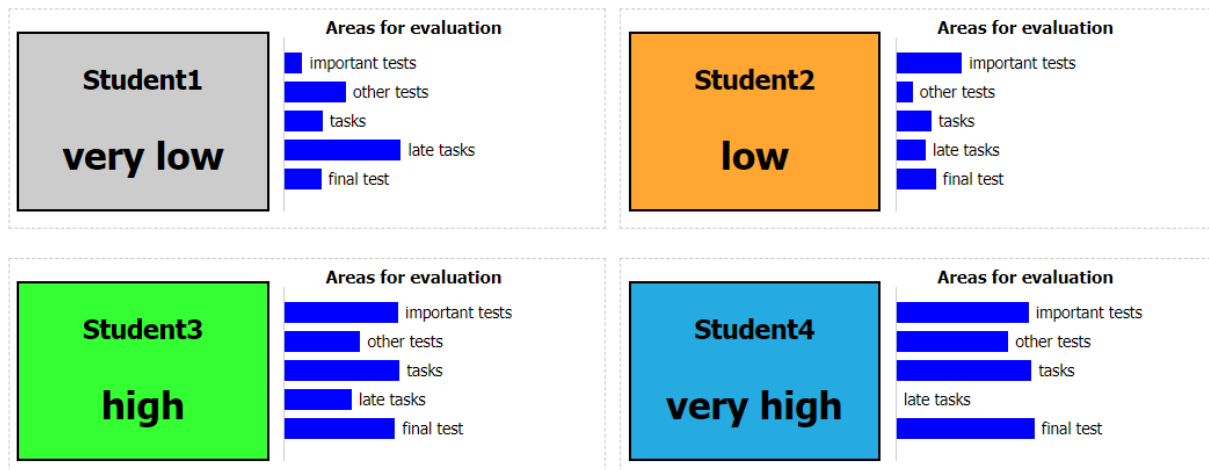


Fig. 2. Evaluated results of student evaluation

4. CONCLUSION

In this paper, the expert system for evaluating students in e-learning systems was proposed. The expert system evaluates student activity in the LMS system (progress tests, tasks, final test). Based on these criteria (results of tests, tasks, and final test) and the knowledge base of the expert system, the overall student evaluation is proposed, and the results are visualized. The teacher can then, taking into account this recommendation, give the final evaluation to the student. The knowledge base of the expert system contains a set of IF-THEN rules. The expert system was created using a special inference method called Perception-based Logical Deduction (PbLD) and a defuzzification method called DEE (Defuzzification of Evaluative Expressions).

In future work, we would like to verify the proposed system on a set of real students, several e-learning courses in LMS Moodle, and other types of LMS systems.

Acknowledgements

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Didactic Games in Environmental Studies Lessons at The Beginning of Elementary Education

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Abstract

Didactic games combine emotional, social, and cognitive aspects of child's development, increase their interest, attention, and motivation. In 2019, we conducted a survey that included 109 teachers teaching environmental studies subjects. Focus of our research was to determine how important it is for them to include didactic games in environmental studies lessons, how often they use them, what types of didactic games they use most often, in which part of a lesson, in which content they include a game, do they check at the lesson end whether pupils have achieved the set goals, where they most often obtain the didactic games they use, and what are the reasons why they do not include games in lessons more frequently. The results of the survey show that teachers consider the inclusion of didactic games in the teaching of the environment important. More than half of the respondents use the didactic game in class several times a month. The game is most frequently used in the learning phases of repetition and training and in the thematic areas of traffic, people and time. The didactic games that teachers use in class are most often made by themselves, and the necessary materials for making them are obtained at home. Most of the interviewed teachers would like to include didactic games in the lessons more often. The most common reasons they gave for not including games more often were lack of time and too many students in the class.

Keywords: Teaching, Primary school, Environmental Studies, Didactics, Game

1. INTRODUCTION

Teaching is a planned, organised, and efficient process that includes three basic activities, namely teaching, learning, and education. In the process, pupils acquire and expand their knowledge, develop their abilities, skills, and personal features [1]. The focus is mainly on learning the content that develops not only intellectual but also physical, emotional, and spiritual dimension in an individual [2]. Therefore, teaching cannot be realised only by transferring learning content to pupils, where the most important role is those of a teacher; namely, it is necessary to put an active role of a pupil in the forefront [3]. This form of teaching is dictated by modern didactic approaches, allowing teachers and pupils for a deeper insight and understanding of the learning content. Pupils increase their ability to abstract, the ability of problem solving, understanding of concepts and facts, while the quality of teaching is also improving [1,4].

1.1. Teaching environmental studies

In the environmental studies subject, it is important that teachers include an experiential, project- and research-based approach, and allow pupils to experiment independently, which encourages thinking, experiencing, creativity, and motivation [1]. Active learning is learning that activates the pupil holistically, mentally, and emotionally. Such learning is successful if it takes place through independent thinking and searching, by meaningful dialogue in a group, and through setting and testing hypotheses [5]. Through active work, pupils acquire their skills for independent thinking, creativity, learn to think effectively, justify their ideas, and confidently cope with the problems encountered

[6]. The result of active learning is more durable knowledge that is useful in new situations and helps us better understand ourselves and the world in which we live [5]. In the modern educational process, teachers are no longer just knowledge transmitters; they become a moderator, animator, mentor, and an organiser of stimulative learning environment [2]. Although a teacher has no longer an active role, they are still very important in the process, as they directly and indirectly influence the development of pupils [3].

Recent didactic knowledge about learning is related to constructivist, experiential, and innovative learning, preparing a pupil to theoretical and practical problem solving, and bringing the learning process closer to life. According to these findings, teaching should be based on learning through discovering, constructivist and problem-based learning, taking into account an individual and guiding them to construct their own knowledge based on previous experience [1]. Learning is a psycho-physical activity of human, it is used to learn about things, phenomena, and the world around them, which is important for human development, existence, and self-assertion. Through learning, a person develops their competences, which are important for their existence, functioning, and development, a person expands and improves them. Learning is a person's inner activity that no one can do instead of them or learn for them. It is a demanding and tiresome activity, which is an increasingly important component of human social and everyday life and work [7]. Experiential learning or experientially focused lessons can be defined as learning that seeks to connect a person's sensory and emotional experience, thinking, analysing, and acting, into a whole, and the key element of which is a pupil. Namely, pupils' knowledge is a product of their personal involvement in the pedagogical process [8]. The main role in experiential learning is played by pupils' comprehensive personal experience. Experiential learning has three main characteristics, namely: experiential learning is a cyclical and holistic process, which is not focused on accepting ready-made knowledge, but on a process of knowledge formation [9]. According to Walter and Marx [9], the central methods of experiential learning include simulations, role-playing, social games, structured tasks, group interaction, and physical movement and relaxation.

1.2. Teaching and learning with didactic games

Didactic games combine emotional, social, and cognitive aspects of child's development, increase their interest, attention, and motivation. They encourage independence, self-criticism, patience, self-control, and teach them to follow instructions. They develop knowledge, abilities, skills, and attitudes, while not tiring a child. Games also allow pupils to be relaxed, cheerful and, consequently, more successful [10]. Therefore, a game is not just some playing as often considered by adults, as it has a significant impact on the child's overall development. That is why it is necessary to pay more attention and time to play especially in the first educational period, when children begin learning about the world, gaining new experiences in observation and practical creation [11, 12].

In a classroom, a game can only be effective under a guidance of a good, professionally trained teacher, whose role is not diminished but increased by the game, while becoming more complex. A game also enables a different relationship between a teacher and pupils. Therefore, a teacher is no longer a person that maintains discipline, but becomes a collaborator that respects pupils, who learns and changes themselves together with pupils [3]. Didactic game can be used in all stages of the learning process, i.e. in repetition, consolidation, in exercises ... [13], because it helps pupils to be relaxed and satisfied [14]. Moreover, the game is characterised by bringing pupils closer to each other, teaching them patience, sacrifice, and understanding [15].

Didactic game brings cognitive comprehension and associated educational goals to the forefront. Therefore, it is a game that meets the pre-planned educational goals that are to be achieved through an active role of pupils. It is the attainment of goals and the acquisition of new pedagogical knowledge that distinguishes a didactic game from classical play [16]. According to [17], a didactic game cannot be opposite to an ordinary play; therefore, it cannot become a non-free game regulated by strict rules. If the game has to have rules, they should be designed in such a way that they can be changed, invented, and created. These games offer pupils several versions, and they decide for themselves whether to participate in a particular game or not. Consequently, many didactic games have no rules; they rely solely on a spontaneous activity and creativity of children. Tomić [3] further claims that didactic games differ from free plays in the fact that they are not spontaneous, i.e. they do not occur from a child's inner need, as they are not invented by children, they are constructed by adults, in most cases by teachers that make them the subject to specific learning goals. Each game includes a problem, which is supposed to be solved by pupils and which requires intellectual effort, the content and course of the game. After the game, a pupil experiences satisfaction, which a teacher uses to see to what extent they managed to achieve educational goals. Didactic games are used to achieve pre-set goals that can be designed by adults or by children. Through the activity, a child recognises, accepts and observes pre-determined,

agreed, and accepted rules. Didactic games have usually an attractive content with determined or less demanding rules to be followed by a child. A child is not completely free in the game, but they have fun during the activity.

2. METHODOLOGY

2.1 Purpose of the study

We were interested in how important it is for teachers to include didactic games in environmental studies lessons, how often they use them, what types of didactic games they use most often, in which part of a lesson, in which content they include a game, do they check at the lesson end whether pupils have achieved the set goals, where they most often obtain the didactic games they use, and what are the reasons why they do not include games in lessons more frequently. Finally, we were also interested in the level of teachers' agreement with each of the statements about didactic games. Statements:

- The didactic game is a suitable method for teaching the subject of environmental studies.
- Students learn most from their own experiences.
- Didactic play is a form of experiential learning.
- Students respond positively to learning with didactic play.
- By using didactic games, students are more motivated and the quality of teaching is better.
- When using didactic games, students make progress not only in the cognitive area, but also in the social and emotional areas.
- The knowledge acquired through games is more lasting and of better quality.
- The game has a positive effect on social contacts.
- I often make the didactic game I use in class by myself.
- I would like to have additional training in the use of didactic games in learning about the environment.

2.2 Research method

As a basic research method, we used descriptive and non-experimental method of pedagogical research. In research questions, we were reasonably interested in the existence of statistically significant differences according to the environment and grade of teaching, the number of pupils in the classroom, the professional title, and the teacher's years of service.

2.3 Research sample

The study included a non-random sample of teachers who taught the subject of environmental studies in 1st, 2nd or 3rd grade during the 2018/2019 school year.

Table 1. Number (f) and structural percentage (f%) of respondents by grade they are teaching

Teaching grade	f	f %
1 st grade	47	43.1%
2 nd grade	29	26.6%
3 rd grade	33	30.3%
Total	109	100.0%

2.4 Instrument

Data for all variables were collected using a questionnaire. We ensured validity with reviewing and pre-testing our questionnaire on a sample. Reliability was controlled from the start of creating questions since we were careful to

provide detailed instructions and unambiguous specific questions. Reliability was also monitored when processing data since we compared the answers to content-related questions. Objectivity was controlled with a selection of closed questions, which could not be changed with the subjective assessments of information. The objectivity of instrument was based on individual interviewing without the presence of an assessor. The questionnaire consisted of various types of questions – dichotomous, close-ended, open-ended, Likert scale.

2.5 Data collection and analysis

The data were acquired in 2019 in Slovenia. The data were processed at the level of descriptive and inferential statistics. The SPSS program and the following procedures were used for the analysis: frequency distributions (f, f%), basic descriptive statistics, non-parametric test χ^2 for frequency analysis of non-numerical variables, Kullback 2 \hat{I} test (when the conditions for using the χ^2 test for the independence hypothesis were not met), Kruskal-Wallis test for independent samples to test for differences in teachers' attitudes according to teaching class, number of students in the class, length of service, and teachers' professional title. Mann-Whitney test to examine differences in teachers' attitudes toward the classroom environment. The difference between the groups was considered statistically significant if the degree of risk for the validity of the null hypothesis was less than five per cent (i.e., $p < 0.05$). The level at which the null hypothesis is rejected is usually set at five or fewer times out of 100. The 0.05 probability level is acceptable as a reasonable choice in most social studies research [18,19].

3. RESULTS WITH DISCUSSION

3.1 Use of didactic games in environmental studies lessons

How often teachers use didactic game in environmental studies lessons?

Table 2. Number (f) and structural percentage (f%) of respondents' answers by frequency of inclusion of didactic games in environmental studies lessons

Frequency of inclusion of didactic games in environmental studies lessons	f	f %
Never	1	0.9%
Few times a year	11	10.1%
Once a month	20	18.3%
More times a month	63	57.8%
At least once a week	14	12.8%
Total	109	100.0%

According to the results, more than half of the surveyed teachers use a didactic game in environmental studies lessons several times a month. They most often use rule games, which are followed by role-playing games, while construction games are rarely used. Statistically significant differences with respect to independent variables were not proved. The results can be compared to the research carried out by Jančič and Hus [20] exploring the same topic in the social studies subject carried out in fourth and fifth grades of elementary school. They found that teachers in the social studies subject most frequently use role-playing games, which are followed by rule games, and constructive games are used most seldom, just like the teachers surveyed in our study. We see, therefore, that teachers in the lower grades prefer using rule games, while teachers in the second educational period prefer using role-playing games.

How often do teachers use didactic games in individual stages of the learning process?

Table 3. Number (f), structural percentage (f%) and average value (\bar{x}) of the frequency of use of didactic games in individual stages of the learning process

Frequency of use of didactic games in individual stages of the learning process	Never	Rarely	Often	\bar{x}
	f f %	f f %	f f %	
Introduction	8 7.3%	48 44.0%	53 48.6%	2,41
Acquisition	3 2.8%	64 58.7%	42 38.5%	2,36
Training	4 3.7%	32 29.4%	73 67.0%	2,63
Repetition	2 1.8%	29 26.6%	78 71.6%	2,70
Evaluation	19 17.4%	53 48.6%	37 33.9%	2,17

The results show that teachers most often use didactic games in repetition and training, which is followed by introduction and acquisition, while didactic games are most seldom used in examination. Statistically significant differences can be identified in the learning stage of acquisition, depending on the environment and the teacher's years of service. Teachers teaching in an urban elementary school use didactic games more often in acquisition than teachers teaching in a rural elementary school ($\chi^2 = 9,629$, $P = 0,008$). Teachers with 0 to 10 years of service are more likely to use a didactic game in acquisition than teachers with 11 to 20 years of service and teachers with more than 21 years of service that use a didactic game in acquisition less often ($\chi^2 = 10,808$, $P = 0,029$).

In which contents from the curriculum of the subject environmental studies do teachers most often use didactic games?

According to the results, teachers most frequently use didactic games in the content relating to the thematic set of traffic (18.8%), human (13.6%), and time (12.7%), which are followed by the content of forces and movement (8.0%), and materials (7.7%). Teachers use didactic games most seldom in the content related to the thematic set of phenomena (2.5%).

Statistically significant differences can be identified in the thematic sets of traffic, human, and time. In the thematic sets of traffic and human, there is a statistically significant difference with respect to years of service, where teachers with 11 to 20 years of service use didactic games in traffic ($\chi^2 = 6,311$, $P = 0,043$) and human ($\chi^2 = 9,147$, $P = 0,010$) more often than teachers in other categories.

There is a notable statistically significant difference in the time thematic set, with respect to teaching grade, namely teachers teaching in third grade use didactic games in lessons more often than teachers teaching in lower grades ($\chi^2 = 11,125$, $P = 0,004$).

After the completion of the didactic game, do the teachers check whether the students have achieved the set learning goals?

According to the research analysis, the surveyed teachers check whether pupils had achieved the set learning goals after a didactic game is completed (90.8%). A vast majority of those that check the achievement of goals (85.3%) wrote that they only do it orally, and a few wrote that they combine written and oral goal checking (4.6%).

Where do teachers most often acquire the didactic games they use in environmental studies classes?

Results show that teachers using didactic games in the environmental studies subject in most cases make their own didactic games (50.5%), while some of teachers find games on websites (30.3%) as seen in table below.

Table 4. Number (f) and structural percentage (f%) of teachers answers when asked about the origin of the didactic game

Origin of didactic game	f	f %
I make my own didactic games	55	50,5 %
In textbooks	7	6,4 %
In teacher manuals	10	9,2 %
On websites	33	30,3 %
Other	4	3,7
Total	109	100 %

Statistically significant differences are observed in terms of the teaching grade and teacher’s years of service ($\chi^2 = 21,008, P = 0,007$). Teachers teaching in first and third grades in most cases make their own didactic games, while teachers teaching in second grade most frequently get a didactic game on websites. Teachers with lesser years of service in most cases make their own didactic game they use in class, while teachers in other categories either make their own didactic games or often find them on websites ($\chi^2 = 17,255, P = 0,028$).

In the questionnaire, we were also interested in where teachers get the necessary material to make a didactic game. We categorised the obtained answers and consequently got three groups of answers. Teachers find necessary materials in most cases at home by collecting packaging waste, cardboard, recycling old games, or collect the necessary material in nature. Quite a few teachers wrote that they bought the necessary material or got it at school, e.g., they used visual art material.

Do teachers want to include didactic games in environmental studies classes more often?

In the questionnaire, we were also interested in whether teachers want to include didactic games in environmental studies lessons more frequently.

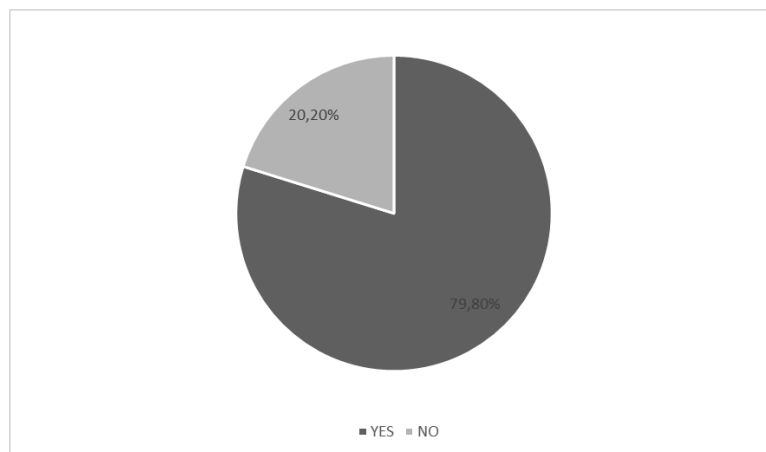


Figure 1. structural percentage (f%) of teachers to the question whether they want to include didactic games more often

According to the results in figure 1, most teachers want to use games in class more often (79.2%). We notice statistically significant differences with respect to years of service and a teacher’s professional title. According to the teacher’s years of service ($\chi^2 = 6,529, P = 0,038$), we can see that teachers with 11 to 20 years of service want to include didactic games in the environmental studies lessons more frequently than teachers in other categories.

Considering the professional title ($\chi^2 = 10,893$, $P = 0,012$) we observed that teachers-counsellors want to include didactic games in their lessons more frequently than teachers in other categories. The category of teachers with no professional title stands out, where all the surveyed teachers with no title wrote that they wanted to include didactic games in their lessons more frequently.

Why don't teachers include didactic games more often in their lessons?

We were also interested in reasons why teachers do not use didactic games in environmental studies lessons more frequently. The results show that teachers do not opt for didactic games due to lack of time (41.1%) and too many pupils in the classroom (23.4%). Quite a few of them stated that the preparation of didactic games took them too much time (15.8%); therefore, they did not opt for them. There are statistically significant differences observed in too large number of pupils in the classroom with respect to the environment and the number of pupils in the class. In terms of teaching environment, we found that the teachers teaching in urban elementary schools claimed too many pupils in the classroom to be a more common reason for not using didactic games in the environmental studies subject than the teachers teaching in rural elementary schools. According to the number of pupils in the classroom, we can see that the teachers having more than 21 pupils in the classroom more often chose the indicated reason than the teachers teaching in classrooms with a smaller number of pupils. Statistically significant differences are also observed in the reason „The learning content does not allow me to do so“, namely depending on the number of pupils in the classroom, where the teachers with 16 to 20 pupils in the classroom more often chose the said reason than the teachers in other categories. The obtained results can be compared to the research of Jančič and Hus [20] exploring why teachers do not use didactic games in the social studies subject. As with our research, they also found that teachers had claimed the lack of time and too many pupils in the classroom to be the most common reasons.

3.2. Teachers attitudes towards didactic games

In the last question, we were interested in the rates of agreement by the surveyed teachers on specific statements about didactic games. Results are shown in the table 5.

Table 5. Number (f), structural percentage (f%) and average rank (R) of responses to agreement with each statement

Statement	Answers						R				
	Don't agree at all		Agree		Fully agree						
	f	f %	f	f %	f	f %					
The didactic game is a suitable method for teaching the subject environmental studies.	0	0.0 %	6	5.5 %	49	45.0 %	54	49.5 %	109	100 %	4,44
Students learn most from their own experiences.	0	0.0 %	0	0.0 %	14	12.8 %	95	87.2 %	109	100 %	4,87
Didactic play is a form of experiential learning.	0	0.0 %	1	0.9 %	34	31.2 %	74	67.9 %	109	100 %	4,67
Students respond positively to learning with didactic play.	0	0.0 %	3	2.8 %	32	29.4 %	74	67.9 %	109	100 %	4,65

By using didactic games, students are more motivated and the quality of teaching is better.	0 0.0 %	2 1.8 %	11 10.1 %	32 29.4 %	64 58.7 %	109 100 %	4,45
When using didactic games, students make progress not only in the cognitive area, but also in the social and emotional areas.	0 0.0 %	0 0,0 %	2 1.8 %	34 31.2 %	73 67.0 %	109 100 %	4,65
The knowledge acquired through games is more lasting and of better quality.	0 0.0 %	1 0.9 %	11 10.1 %	37 33.9 %	60 55.0 %	109 100 %	4,43
The game has a positive effect on social contacts.	0 0.0 %	1 0.9 %	3 2.8 %	33 30.3 %	72 66.1 %	109 100 %	4,61
I often make the didactic game I use in class by myself.	2 1.8 %	12 11.0 %	16 14.7 %	32 29.4 %	47 43.1 %	109 100 %	4,01
I would like to have additional training in the use of didactic games in learning about the environment.	0 0.0 %	3 2.8 %	27 24.8 %	26 23.9 %	53 48.6 %	109 100 %	4,18

The teachers agreed or fully agreed on all the statements. They ranked highest the following statement *Students learn most from their own experiences* by which they confirmed previous investigations indicating that an individual learns best if they try the item by themselves, which is the central idea of experiential learning [1]. Teachers also fully agreed with the following statement *Didactic play is a form of experiential learning*.where it is classified by Tomić [21] according to the theory.

Teachers fully agreed with the statement of *Students respond positively to learning with didactic play*. Thus, we confirmed the claims of Horvat and Magajna [22] claiming that play provides a child with joy, satisfaction, and an opportunity of free expression. This is why children respond to a game positively and with satisfaction, which was also proved by Jančić and Hus [20] asking fourth and fifth grade pupils whether they liked social studies lessons in which their teacher used a didactic game. Almost all pupils answered the question affirmatively, i.e., that they really liked or liked the social studies lessons in which their teacher used a didactic game.

Teachers agreed or fully agreed with the following statements *When using didactic games, students make progress not only in the cognitive area, but also in the social and emotional areas* and *The game has a positive effect on social contacts*. This confirmed the statements of the authors claiming that the method of play is more pupil-focused, which is why in such teaching method pupils make progress not only in the cognitive area, but also in social and emotional areas. Moreover, a game has a positive effect on social contacts, and it strengthens relations among pupils [17,23].

The surveyed teachers also agreed with the following statement *By using didactic games, students are more motivated and the quality of teaching is better*. By this statement, teachers agree with many authors claiming that a game makes learning more fun, while it also helps improving the motivation and better connections among pupils. Pupils are active during the game; therefore, they memorise certain information faster and connect it with their existing knowledge. A game also provokes their attention, which makes learning more interesting and, consequently, lessons are of better quality [24,25].

The surveyed teachers agreed with the following statement *The didactic game is a suitable method for teaching the subject environmental studies*, which means that they are familiar with the theories of modern didactic approaches giving priority to an active role of pupils and experiential learning, which also includes didactic games with the help of which pupils unintentionally learn a lot, they are relaxed and satisfied [3, 14, 16].

The analysis showed that teachers also agreed with the last statement *I would like to have additional training in the use of didactic games in learning about the environment*. Most of the teachers, therefore, want additional training courses on the topic of didactic games, which means that they want changes in their established way of teaching. Through additional trainings, it would make sense to present teachers with didactic games for specific contents in the environmental studies' subject curriculum. It would also be very good if teachers could make didactic games on their own during training courses to use them in the classroom, as it would enable them to save a lot of time, which is one of the important reasons why teachers do not use didactic games more often. Due to the variety of learning contents, the environmental studies subject is very suitable for the use of didactic games, especially in the early years of education.

4. CONCLUSION

To conclude, results showed that teachers consider the inclusion of didactic games in the teaching of the environment important. Most of the participating teachers would like to include didactic games in the lessons more often. The most common reasons they gave for not including games more often were lack of time and too many students in the class. The didactic games that teachers use in class are most often made by themselves, and the necessary materials for making them are obtained at home. Most of the teachers, therefore, want additional training courses on the topic of didactic games, which means that they want changes in their established way of teaching. Through additional trainings, it would make sense to present teachers with didactic games for specific contents in the environmental studies subject curriculum. It would also be very good if teachers could make didactic games on their own during training courses to use them in the classroom, as it would enable them to save a lot of time, which is one of the important reasons why teachers do not use didactic games more often. Due to the variety of learning contents, the environmental studies subject is very suitable for the use of didactic games, especially in the early years of education.

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The Impact of Listening Skills on Students' Motivation to Learn in Second Language Acquisition

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Abstract

This study aims to analyse the impact of listening skills on students' motivation to learn in second language acquisition. This study identifies those listening skills influence positively the creation of a favourable learning environment. The objective of this study is to examine the impact of second language listening skills through interactive methodology on fostering motivation to learn. To achieve this goal there are raised the following research questions: How does interactive listening in a second language work to motivate students? What are the most appropriate strategies and activities in interactive listening? What role does motivation play in improving second language listening skills? To answer the research questions, we used the qualitative method, a meta-analysis, which enables the creation of systematic and comprehensive knowledge in this field. The findings of this study will serve as recommendations to assist teachers and researchers in promoting listening skills during foreign language acquisition. The recommendations will also provide key strategies and pedagogical tools to improve second language listening. In terms of motivation, the main findings of this study show that listening skills have a positive effect on fostering motivation to learn. Also, the findings suggest that interactive listening fosters communication from different perspectives and is also an important motivating factor.

Keywords: Impact, skills, listening, motivation, second language

1. INTRODUCTION

Listening is quite a complex skill and not just the perception of sounds. It is a skill through which children, young people and adults gain a great deal of information to understand the world around them, their ideals, values, and their appreciation. Through listening, students learn what is expected of them and how to act to accomplish their tasks. Listening is an active skill and needs to be learned. Students should also listen to ideas and information from adults and their peers to expand the range of answers from which they can choose. Listening involves understanding words, phrases, sentences, and discourse. Listening in a foreign language is difficult. To listen effectively, students need to understand information, including context and culture, to understand dialectal differences and the phonology of the language system.

Previous research has identified several strategies that can improve listening. Therefore, it is important for second language teachers to help students be aware of the complex nature of second language learning, including: comprehension, communication, and thinking: relevant characteristics of the foreign language. Clearly, teachers need to create meaningful tasks, tailored to address the learning needs and goals of students inside and outside the classroom. Thus, teachers need to enable students to make choices about what is right for themselves so that they can control learning, which leads to development for students. This point of view promotes autonomy and motivates

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students to learn further outside the classroom, using sources such as TV, radio or using a foreign language to exchange views with their peers.

1.1 Research Objectives

The main objective of this study is to examine strategies and activities through interactive listening methodology, to boost student motivation. This study focuses on the following specific objectives:

1. To identify learning strategies and activities that promote motivation through the development of interactive listening and critical awareness in the classroom.
2. Introduce and recommend interactive listening methodologies, as a key component in teachers' professional development, providing key strategies and pedagogical tools.

1.2 Research questions

This study will try to answer the following research questions:

1. How does interactive listening in a second language work to motivate students?
2. What are the most appropriate strategies and activities in interactive listening?
3. What role does motivation play in improving second language listening skills?

2. LITERATURE REVIEW

It is important to lay the foundations of the theoretical structure of this study by defining and providing the background of the main concepts of this study. These concepts cannot be treated in isolation, as they are related to certain topics. The literature review consists of an analysis of scientific articles and books which have identified topics such as: motivation, learning strategies in listening to a foreign language, cultural experience.

2.1 Motivation to listen

According to the Routledge Encyclopedia (2000), motivation provides reinforcement of second language learning. In other words, motivation in a second language is defined as the desire or effort to gain and learn more. Brownell (1994) also argues that a successful process of listening in class or outside is largely dependent on the need of individuals to understand the second language.

Intrinsic motivation is perceived as students' attempt to master learning, while instrumental motivation mainly focuses on the practical and functional use of second language.

2.2 Learning strategies

According to Saville-Troikas (2006), learning strategies refer to behaviors and techniques used by students to learn a foreign language, which are influenced by their motivation, cognitive style, and personality, as well as by specific contexts of use and opportunities. to learn.

2.3 Student autonomy in listening

Interactive listening stimulates students' motivation by creating opportunities, to take the initiative to learn by increasing their confidence and ability to learn effectively a second language. Creating opportunities for students to

engage in a class discussion, ask questions, and constructively argue their views based on questions posed by classmates is important as it expands their vocabulary.

Students should be given different opportunities where they can choose the activity that best suits their interests and their learning style. Promoting student autonomy refers to teachers' ability to identify learning opportunities that cultivate students' interests and learning needs. (Reeve et al., 2004). Willis (1996) also asserts whether students will learn the foreign language unconsciously when they are engaged in communicative tasks. In this situation, exposure to the second language is essential for the advancement of students' knowledge and listening skills in the second language, such exposure encourages students to use the second language appropriately to convey meaning.

2.4 Listening and comprehension strategies

Research on second language listening strategies is a topic of great interest by collecting data and identifying strategies that will improve listening skills and promote language acquisition. Research in recent years has shifted and focused on how students manipulate input. Therefore, understanding second language listening strategies tends to face the difficulties that students experience. Second language research focused in clarifying mental listening processes and identifying facilitation strategies. Interest in listening and comprehension strategies has been evolved in a number of studies (O'Malley, Chamot, & Walker, 1987; Oxford and Crookall, 1989; Wenden and Robin, 1987).

2.5 Interactive listening

Interactive listening in second language is considered as learning a second language, when students are faced not only with "intelligible inputs", but also when they have to negotiate meaning and engage in spontaneous and meaningful communication. For this reason, the task promotes the processes of negotiation, modification, paraphrasing and experimentation, which are at the center of second language learning. This view focuses on the critical importance of conversation in second language acquisition. (Sato, 1988). In this regard, comprehensible language creates opportunities to negotiate in task-based activities. In other words, the interactive listening approach nurtures and motivates students to engage actively in language learning.

3. METHODOLOGY

This study has used qualitative research methods, more specifically, a meta-analysis. It has been selected the meta-analysis because it enables a detailed and systematic analysis of the topics covered in the study. This research design is most suitable in answering the research questions. Similarly, Green and Britten (1998) have argued that systematic review is essential in qualitative research, as it effectively facilitates the research process.

3.1 Collection and selection of relevant texts

According to Franzosi (2003), content analysis is a good instrument to gather relevant information on key topics. There have been selected studies and scientific articles, which are classified according to theoretical, methodological, as well as critical approaches to second language teaching. In this regard, it has been collected data from various scientific journals such as; *Educational Research, Perspectives on Motivation, Methodology in Language Teaching, English Teaching Forum, Applied Linguistics, Child Language Teaching and Therapy, Language Awareness, Social Behaviour and Personality, Psychological Science, The Modern Language Journal, Language Teaching Research, TESOL Quarterly, Qualitative Social work, Journal of College Teaching & Learning, The Journal of General Education*.

3.2 Determining the unit of analysis

According to the content analysis approach, the analysis unit is the smallest point where researchers focus on question research. This view is supported by Long, who has argued that a unit of analysis is topics with which researchers can analyse and create evidence for his or her study (as cited in Lewis-Beck, Bryman & Liao, 2004).

Consistent with the framework of this study, the units of analysis are defined in terms of topics around research questions based on the above definition.

3.3 Data collection and coding

In the framework of this study, the units of analysis are defined in terms of units of identifiable topics around research questions. It is also a microstructure which builds the quality of a text in taking on the meaning of the main ideas discussed by the author and through coding, researchers take a new perspective on the data and address different perspectives (Charmaz, 2000). According to Charmaz (2000), in support of Glaser's view, he asserts that, "By comparing data with data, data with theoretical categories, and comparing categories with categories, the researcher gains new ideas, in a critical way, and complete, to analyse the data." After analysing the texts guided by the research questions, we defined the topics of the data, to proceed with their classification into three main categories as discussed in detail below:

1. Interactive listening in second language. -This category is related to techniques and activities to promote the autonomy of students to learn a second language.
2. Motivation in interactive listening - Topics in this focus on general stimuli and overall engagement of students in the second language.
3. Cultural experience in interactive listening -Topics in this category are factors that stimulate students' interest in incorporating their culture with that of a second language.

4. RESULTS

Collected and coded information which is guided by research questions and includes the main topics that make up the analysis unit. After analysing the data describing the findings based on the topics are interpreted and defined the research conclusions. As Kaplan points out, "Content analysis is a technique that seeks to identify and interpret the meanings of different topics in a systematic and qualitative manner" (Lewis-Beck, Bryman, and Liao, 2004, p. 186). The database was analysed using qualitative content analysis. Research questions have guided the analysis of each article in this study:

1. How does interactive listening in a second language work to motivate students?
2. What are the most appropriate strategies and activities in interactive listening?
3. What role does motivation play in improving second language listening skills?

5. CONCLUSIONS

The main purpose of using the interactive listening approach is to promote motivation and the development of listening skills, where students have optimal opportunities to communicate and learn in a second language. The results of this study show that methods derived from both progressive education and critical pedagogy support the theory that a democratic classroom will have more engaged students.

Count's definition coincides with the thesis and analysis of this study, where students' motivation is at the centre of successful second language learning and the spontaneous use of second language to develop listening. Student choices and autonomy have a significant impact on student motivation. This means that teachers need to create a learning environment that fosters critical thinking, as a pedagogical tool to foster student motivation and active participation. For example, teachers should design activities and teaching materials that stimulate students' interest in being actively engaged, given the minimal exposure to second language outside the classroom. However, it is important to note that reading and discussion also stimulate interest by focusing on topics that students encounter

outside the classroom such as, movies, television programs, etc. When teachers instil a sense of mastery of learning, students tend to be engaged, as they have control over learning.

Moreover, this study finds that a positive atmosphere, where the role of the teacher and positive feedback significantly stimulate student motivation. These motivational techniques suggest that learning is an ongoing process and through various interactions in the classroom nurture discussions, which are vital for building and developing knowledge in a second language. These motivational techniques empower students with social and academic skills such as communicative competence, confidence, and self-perception to learn a second language. (Thompson et al., 2004). This study also found that understanding students' interests, learning styles, and language levels create a positive learning environment, which is considered a key factor in student motivation.

6. RECOMMENDATIONS

The results of this study show that meaningful interactions between teachers and students in the classroom are important aspects of effective communication, which promote motivation and the development of second language listening skills. Therefore, this study recommends that teachers should create conditions for students to use authentic second language. In this situation, classroom activities stimulate students' motivation and attention when they are directly related to their interests outside the classroom. To form links between what is taught in the classroom and what they want to do outside the classroom, teachers need to use a variety of teaching tools.

A second recommendation is to develop second language listening, encouraging students to use the second language spontaneously, to describe feelings, and to share ideas and thoughts to improve their level of practical knowledge. Therefore, students' learning strategies and choices should be considered as important tools to improve their motivation and listening skills in the second language.

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East Asia Supply Chain Management in The Global Logistics System: The Strategies, The Challenges and Research Needs

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Abstract

The article deals the aim and problem close to East Asia logistics network in global logistics system. The role of East Asia in the contemporary global logistics market situation is highlighted, the main supply chain management aspects of the research are described. It is shown that the research on the processes of East Asia transportation market is very promising and significant both in a scientific and in practical sense. The paper plans to evaluate the latest transport and logistics management technology strategies, addressing supply chain problems, based on targeted research in the context of cooperation with the East Asian transport market. There is a detailed description of the needs and priorities of the research in East Asia supply chain and logistics market. The paper would look for theoretical and practical solutions analogous specifics of supply network management in the East Asian logistics market to assess the bargaining power in international business negotiations, corporate reputation, supply chain management strategies and taking into account the multicultural context of international business development in East Asia transport and beyond.

Keywords: Supply Chain, Transport Management, Corporate Strategies.

1. INTRODUCTION

Modern world society is characterized by rapid political, economic, social and technological changes, the East Asian transport and logistics market is becoming increasingly attractive to foreign investors, more important than the international market factor. However, supply chain management in the East Asian transport market also means a new, global world-dictated link between technology, logistics, economics and culture. In order to properly understand the importance of the specifics of East Asian transport and logistics system management and the successful establishment and development of cooperation between Europe and other regions with this market, it is necessary to conduct an analysis of East Asian modern supply chain management. In this way, a new model of transport market operation can be found, which combines the specifics of supply chain management in the East Asian logistics transport market with international business, global trade, technological, economic and cultural ties.

Statement of the problem: Transit is a very important part of the Lithuanian economy, logistics and transport-related companies generate a large share of GDP. Cooperation with the East Asian region is becoming increasingly important in the international context, with the Chinese market and cooperation with other regions playing an increasingly important role. This is important both for Lithuania in organizing transit corridors and transportation, and for the whole of Europe. Modern world society is characterized by rapid political, economic, social and technological changes, the East Asian transport and logistics market is becoming increasingly attractive to foreign investors, more important than the international market factor. However, supply chain management in the East Asian transport market also means a new, global world-dictated link between technology, logistics, economics and culture. In order to properly understand the importance of the specifics of East Asian transport and logistics system management and the

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successful establishment and development of cooperation between Europe and other regions with this market, it is necessary to conduct an analysis of East Asian modern supply chain management. In this way, a new model of transport market operation can be found, which combines the specifics of supply chain management in the East Asian logistics transport market with inter-national business, global trade, technological, economic and cultural ties. The paper plans to evaluate the latest transport and logistics management technology strategies, addressing supply chain problems, based on targeted research in the context of cooperation with the East Asian transport market. The paper would look for theoretical and practical solutions related to the specifics of supply chain management of East Asian logistics market, taking into account the multicultural context of international business development.

Statement of the aim: To study the specifics of the East Asian logistics system, to assess the influence of characteristics of market on logistics network organization and cooperation with other regions.

Logistics, transportation and supply chain evolution organization overview, main key concepts

From all these perspectives mentioned above and others, I will add the view of [4] which concludes very simply and specific that:

1) The objective of Supply Chain Management is to be efficient and cost-effective through collaborative efforts across the entire system;

2) The role of Supply Chain Management is to produce products that conform to customer requirements;

3) The scope of Supply Chain Management encompasses the firm's activities from the strategic level through the tactical and operational levels, since it takes into account the efficient integration of suppliers, manufacturers, wholesalers, logistics providers, retailers, and end users.

It could not be noted "Logistics organization enterprises steps as coursing, acquisition, deploying, relationship affiliations, product co-design, etc". Supply chains are not constant – they unroll and convert in dimensions, form and layout, and in how they are synchronized, guarded and managed. [9] presents Logistics as "the function responsible for the flow of materials from suppliers into an organization, through operations within the organization, and then out to customers".

1.1 Corporate reputation and value chain management in logistics transport value Guanxi market

The priority accorded to industry stunted services development—particularly in productivity terms—while the emphasis on physical investment constrained investment in human capital [1]. In addition, China is expected to upgrade its technological capabilities by fostering a learning and research environment that encourages new ideas and lateral thinking and gradually making the pursuit of innovation more sensitive to market signals, with the government playing a more facilitating role [6]. Three decades or more of fast extension and constructional change have reconsidered China's attitude in the international economy. Among the latter, metals and minerals might be more significantly affected by the slowdown in investment, even if continued residential construction demand, as well as demand for durable goods such as automobiles, limits some of that slowdown [7]. Value chain management is a more consolidated and cross-functional decision-making technique that sees establishments use their harmonizing competences and skills mutually expand the funds urgently to convey higher-level value to customers.

1.2 Global international goods logistics strategy for supply chain organization planning process

Dividing the eight strategic logistics capabilities into demand-oriented capabilities and supply-oriented capabilities, [5] found that three demand-oriented capabilities – delivery speed, reliability, and responsiveness – and one supply-oriented capability – low cost distribution – were most significantly related to firm performance. Logistics deploying is favorable to the companies to diminish the logistic value successfully and evolve their key businesses, advance reestablishment and attain scale interest with the restricted funds. As a consequence, the logistics business outsourcing is an unavoidable alternative for enterprises to shorten the value, while the robust promotion of evolution of third party logistics will play a crucial part. Logistics outsourcing is advantageous to the companies to diminish the logistic price constructively and prosper their main businesses, expedite reconstitution and reach scale welfare with the deficient assets.

[2] suggest a segmented contingency approach with suppliers, pointing at the supplier segmentation that suggests factoring in risks and supplier dependencies into supplier. The industry also operates under a perplexing regulatory environment with no clear structure and little coordination among different government authorities and regions [3].

1.3 Supply chain organization and contribution of physical distribution and warehousing systems

Logistics - a comparatively latest and young area of business, trade, economics and individual behavior. Logistics covers occupations such as news interchange, transport assistance, directory management, distribution center holding and loading. Supply chain company contemplated multiplex procedure intended decreasing universal payments. With regard of manufacture extension, which conduct to a serrated en-large in value, traders ceased on discovering means to lessen the cost of the motion. Not every forewarn incorporates adaptations of elements, that one may be disposed to recognize go along with fluctuations requisite, necessitate in specifically come after the technological development of state.

1.4 Green logistics approaches and the challenges facing supply chain organization infrastructure

In more grown-up market transport economies, precedence contribute to shift with regard to forwarding matters of obstruction and bottlenecks in rationally absolute matrix, the upgrade and perpetuation of existing benefits, and providing for techno-logical transformation. Transport infrastructure plays a condemnatory character in the transformation from a middle- to high revenue market economy.

This interrelation is underpinned by a amount of economic tools activated by en-hancements in transport infrastructure, including the following:

1) High-quality infrastructure is a precondition for the prerequisite of systematic transport assistances for both loads and passenger motions, which in turn maintains essential economic market occupations and removes geographic blockades to rivalry.

2) Infrastructure can be a productive policy instrument to address communal and territorial disparity by joining countryside and remote areas to greater centers of manufacture and utilization, producing more economic occasions for householders and diminishing out-relocation.

From a technological attitude, the observation is essentially paid to the human expansion degree of the infrastructure indicator: whether transport wants are assessed as stated by to portability tendencies, whether the comprehension of transport means is set on putting in an alive or putting in a new technological infrastructure.

1.5 Intermodal, multimodal, and other types of transport systems modality in cargo operations

The 21st century will see a restarted focal point on intermodal cargo transportation powered by the restoring exigency of international and global supply chains. The extension of intermodal load transportation will be handled and taken issue with by four aspects:

1) Estimating, comprehension, and answering to the part of intermodalism in the replacing consumer needs and hyper competition of supply chains in an international global marketplace;

2) The demand to faithfully and flexibly answer to replacing consumer needs with coherent and united systematization of loads and appliances flows through numerous procedures;

3) Proficiency of present and future intermodal functional choices and alternatives, as well as the probable for upgrade data and connections technology and the challenges related with their supplication;

4) Constraints and strategy of infrastructure volume, including policy and regulatory matters, as well as better organization of existing infrastructure and broader contemplations on future investment in new infrastructure

Its more remarkable part in international global supply chains will need an comprehension of supply chain organization, the wants, needs and requirements of the business marketplace, the competences and proceeds in data and connections technology, and the ongoing challenges and restrictions on transport infrastructure.

Some key profits that make multimodal transport an interesting occasion for public and private shareholders comprise:

- 1) Savings in price and time from the prime use of each approach of transport for each stage of the journey
- 2) Sizeable comes again on private and public infrastructure investing
- 3) Greater volume application developing from best use of each method
- 4) Diminished energy utilization
- 5) Reduced natural hazards

Multimodal transport, also investigated as combined transport, suggested the utilization of more than one mode of transport to move loads without the present holding of wares. In multimodal transport the responsibility for destruction during different stages of the journey lies with either the identical or dissimilar loads forwarders. The term intermodal transport is generally used reciprocally with multimodal transport.

1.6 Structured approach in supply chain risks face to Covid-19 impact for global transport industry

A few solutions for enterprises that set off partnership in China affected states en-compass:

- 1) Upskill workers on COVID-19 avoidance.
- 2) Strengthen concealing agreements.
- 3) Assemble for expanded absenteeism.
- 4) Moderate non-crucial travel and encourage pliable working positioning.
- 5) Put together sequence scheme clue directorial areas.
- 6) Centre on available resources.

For enterprises that manufacture, dispense root merchandisers in China, tracks can incorporate:

- 1) Intensify focal point on manpower designing.
- 3) Light up enlarged logistics system.
- 4) Acknowledge operate possible sources of supply.
- 5) Modernize inventory strategy and designing framework.
- 6) Intensify incoming matters' clarity.
- 7) Put together factories stoppage.
- 8) Center manufacture-arranging activity.
- 9) Assess other outbound logistics alternatives and fixed dimensions.
- 10) Performance worldwide outline designing.

For enterprises that vend items for China, traces may incorporate:

- 1) Realize supply and demand impact particular to logistics business.
- 2) Approve long-term demand and supply integration plan of action.
- 3) Put together for possibly channel shifts.
- 4) Estimate different inbound logistics alternatives.

- 5) Open channels of connections with main consumers.
- 6) Assemble for the rebound.
- 7) Perform international framework planning.

In exploring how companies are targeting resilience improvements [8] shows that companies are looking beyond factor costs benefits of a few highly rationalized global sources and considering costs more holistically

2. CONCLUSIONS AND DIRECTIONS FOR FURTHER EMPIRICAL RESEARCH

There are presented theoretical research analysis research of East Asia supply chain management in global logistics system as a consequence to continue further empirical scientific research further analyses based on logistics technological models. The problem and aim of article is clearly defined to proceed with empirical part scientific research. It is shown that the area of possible research of East Asia supply chain management market, research of this type covers a wide range of spheres and priorities. It is noted that scientific research on corporate reputation and value chain management, supply chain organization planning process, physical distribution and warehousing systems, green logistics and supply chain organization infrastructure, transport systems modality in cargo operations, supply chain risks face to Covid-19 is described and evaluated as especially important and significant. Contemporary situation in East Asia in supply chain management as well as logistics origins of this situation are described in detail in this article. It is shown that East Asia mentality of the logistics society and main cultural traditions typical for the contemporary life in East Asia were developed and evolved during the many centuries. The main development tendencies typical for logistics societal life in East Asia during the 20 and 21 century are described in detail. The global logistics system perspective topics of the scientific research on East Asia supply chain management are highlighted in the article. Operational and strategical theoretical research has given fundamental contributions to supply chain organization and transportation main problems and more essential and specific contributions are expected in answer to the new research challenges in China logistics sector. Theoretical scientific research is more vital than ever and can add prominent supply chain value to new available logistics technology. Summing up, my prepared article new literature analysis allows to respond main the research issue that have been given in my work.

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Importance of Marketing Logistics Strategy and Presentation of The Method to Support The Implementation

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Abstract

Logistics was not treated as a separate field for a long time; it was considered as a kind of necessary evil, which generated cost increases for the company. Today, however, in the light of global-scale commercial networks, it is clear that logistics is a separate field of specialization that is at least as important as marketing. Consequently, a well-functioning customer service system requires the development of a marketing logistics strategy. The paper examines the relationship between marketing and logistics and their interaction by using the matrix of the Quality Function Deployment (QFD) technique. This method could be employed to investigate the relevance of marketing expectations and logistics sub-processes for a specific product. The findings of the analysis highlight the extent to which the marketing concept related to the given product complies with the logistics strategy to be applied.

Keywords: marketing logistics strategy, QFD, JIT, cognitive bias

1. INTRODUCTION

The importance of marketing has gained significance since the 1990s. Companies wanted to generate as much profit as possible, and for this, it was essential that the product's reputation should reach the customer. As a result, marketing as a special field has grown to such a size and efficiency that it has pushed many other areas into the background, including logistics, by which products have reached customers. As marketing gained more and more ground and generated more and more demand, professionals noticed that its impact was reflected throughout the entire supply chain. Thus, it often causes cognitive biases in the selection and review of logistics strategies [1, 2].

One of the major corporate goals these days is to meet customer expectations. Due to globalization, a wide variety of products are available in the market increasing competition among companies. A rise in demand has also put a strain on supply chains, as it is not enough for a product just to be good, it must also take into account the place value and time value used in logistics [3], which means the product must be in the right time and at the right place when and where the customer demands it. Therefore, today, marketing and logistics are no longer separable, the two disciplines need to be addressed together and a marketing logistics strategy needs to be developed [4].

The paper is structured as follows: First, it introduces the concepts and illustrates the effects that the marketing concept has on the supply chain through an example. Then it applies a novel approach to the topic of marketing, using the Quality Function Deployment (QFD) technique, which is effectively employed in many disciplines to convert customer needs into technical parameters. Finally, it presents a relevance study to analyze the suitability of the logistics environment for a given product in order to select and review logistics strategies.

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The analysis in the paper based on the Just In Time system focuses on the effects of marketing strategy on logistics decisions. The JIT system is a very popular logistics strategy [5], which is preferred by companies because of its benefits. In many cases, however, it is introduced without examination; neither the existing logistics environment nor the product really requires this logistics strategy.

Based on the focus group study using the QFD technique, it is possible to clarify the impact of the expectations formulated in the marketing mix on the logistics strategy and to identify potential corporate shortcomings.

2. DETERMINING THE IMPORTANCE OF MARKETING LOGISTICS

As a result of industrial development, large companies have emerged, and with it, consumer demands have changed in recent decades. Marketing gained ground as a new discipline, and as a result, several definitions of marketing came up, from which I would describe what was first brought to light by Kotler. "Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others [6]." At the same time, commodity-related logistics began to be dealt with in the United States, which until then had only been present in military areas. The American Council for Logistics Management has proposed a definition which is widespread in the USA: "The process of planning, implementing and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to the point of consumption for conforming to customer requirements [7]."

Although the definition of the two disciplines was born, the close relationship between marketing and logistics was not yet clear. Logistics has not been treated as a separate field for a long time, and company managers have often seen it as a necessary evil. Logistics have been treated as an unnecessary and useless expense. Recently, its importance has increased and companies have realized that the customer buys the product along with its associated logistics services. After all, it is not enough for a product to be popular as a result of the marketing concept, it is also very important that it is available to the customer at the right time and in the right place.

Today, it is essential that the logistics strategy is developed at the same time as the marketing strategy, so today we cannot talk about the two specialties separately, and it has become necessary to apply a marketing logistics strategy [8]. "Marketing logistics is a corporate governance approach and the scope of activities implemented on it, which permeates the entire corporate operation, integrates the results of both disciplines, and presupposes mutual knowledge of managers in related fields and aims at synergistic effects [9]."

The created definition of marketing logistics formally connects the two disciplines, but only in a general approach. Their impact on each other is much more significant. The concepts of marketing and logistics have become closely intertwined in recent years as the world has changed and at the same time customer needs have come to a different light. After all, it is not enough for a product to be good; it must be available in the right place and at the right time.

Therefore, when developing the corporate strategy, the processes must be considered in context, and the efficiency of logistics services must be taken into account when developing the marketing concept. It is necessary to treat the two areas as one and develop a common strategy. For this, a focus group study based on the QFD technique presented as a sample could be used.

On the other hand, the subordination of the two disciplines also needs to be clarified. It is not possible to decide in advance for each product whether marketing or logistics will determine the strategy. Based on the processes belonging to the product, it is necessary to develop a marketing logistics strategy, because the strategic decisions made in advance could significantly worsen customer service.

3. DESCRIPTION OF THE TOPICALITY OF THE TOPIC

In order to illustrate the topicality of the topic, I would like to illustrate through a concrete example what happens when the marketing strategy is not coordinated with the logistics system.

In England, for example, the COVID-19 epidemic has led to a significant increase in the number of courier services. As a result of marketing, people want to get everything delivered to their homes. Initially, using a Push logistics strategy, mass products were on offer. Nowadays, there is already a competitive situation between companies, using Pull's logistics strategy, making exits tailored to customer needs, which already works similar to the Just In Time system.

In the freight transport sector, a significant part of the workforce is contracted to courier services, which offer the same or higher pay and a better work schedule than companies where freight transport takes days or weeks. As a

result, significant economic difficulties have arisen as the country does not have sufficient manpower to import sufficient quantities of fuel.

3.1. Example situation for the topicality of the topic

To clarify the effects of marketing on the logistics system, I have generally described a product shortage situation. Assume that a product gains great popularity as a result of a marketing strategy, but the associated supply chain is not prepared for the increased demand for the product. For example, one technical department store chain advertises a popular product with a significant promotion. The customer wants to buy the product they noticed as an effect of their marketing strategy. After serving a few customers, the products in stock run out, so increased demand is only partially met. The seller communicates to the customers who arrive after that that the product could be ordered, which the buyer could pick up in the store in 1-2 days. Some of them agree and wait for the product, but there are already negative emotions associated with the buying process. The other part of the buyers leave frustrated and buy the product more expensive elsewhere. Both cases lead to customer frustration.

The manager of the trading company could then map the proper operation of the logistics system with the following questions:

- Is stock available at the wholesaler from which you could order?
- Is the storage capacity sufficient for larger stocks? Or do you serve customers with intermittent delivery?
- Is there a suitable supplier to meet the regular, scheduled delivery who could even respond to suddenly increased demands?
- Is there enough capacity in the factory to meet the increased customer demand?
- Is the right amount of raw material available for further production?

The questions adequately represent that the impact of marketing extends to the entire supply chain, so it is necessary to develop a marketing logistics strategy [10,11].

3.2. Examining the need for a JIT system

Another common corporate problem is that marketing strategies developed without examining the logistics environment often incorporate the Just In Time system as an applicable logistics strategy. As the Just In Time system is very popular among companies, after benchmarking company management often makes subjective decisions, without considering the parameters of the logistics system.

The main benefits of the JIT system are as follows.

- Speeds up and simplifies the flow of material and information.
- Results in cost reductions.
- Minimizes the level of inventories, thus providing the company with lower committed capital.
- It also helps to meet the needs of the company [12].

Before implementing a JIT system, it is necessary to examine whether the following two parameters are given in the company's logistics environment, which is a milestone in its implementation.

- Whether the physical conditions are appropriate, for example, whether a material flow arrangement is feasible on the other hand, it is necessary to examine whether managers and employees are committed to the introduction of JIT, one of the key pillars of which is teamwork [13].
- Have managers and employees committed to implementing JIT, one of the key pillars of which is teamwork [13]?

It is necessary to know the order batch sizes and, depending on this, to examine the need for JIT [14], because if, for example, a large quantity of the same product is ordered, it could also be produced in stock as a bulk product. Also, the environmental burdens it causes must be taken into account. For larger companies, the JIT system assumes a delivery of goods every 10-15 minutes, which could cause a significant environmental burden.

Based on the described information, my research goal is to develop a system that could be used to develop a marketing logistics strategy related to a given product, taking into account the specifics of the product.

4. A METHOD TO DEVELOP A MARKETING LOGISTICS STRATEGY

In order to quantify the customer needs, it is necessary to choose a technique of the application of which not only deals with one sub-process but also connects the customer's expectations in a targeted way with the company's activities and technical parameters [15]. There are a wide variety of methods for examining customer expectations and their sub-processes. One of today's forgotten techniques is the QFD technique, the use of which has declined significantly in Europe but is still used in the Far East as a key element of engineering design.

The QFD technique was chosen because it is a structured method with a strict framework. It has been used successfully for a long time in areas related to product design. With the help of its connection matrix, the services could also be examined, thus it could be effectively used for strategic planning as well.

The goal of QFD is to meet the highest possible level of consumer needs through the plan of product designs and manufacturing design processes by engineers, taking into account customer expectations [16]. In practice, this manifests itself in the form of a house called the House Of Quality (HOQ) [17, 18].

To implement the logistics applicability, I used the relationship matrix that forms the body of the House Of Quality

Steps for the logistical applicability of the QFD method:

1. Creating a system of criteria that support the development of a marketing logistics strategy when introducing a given product, as well as points out the shortcomings of the logistics environment.
2. Preparation of a relevance study based on the product characteristics related to the marketing concept (in this case the expectations formulated by the marketing mix), compared to the basic logistics sub-processes and parameters required for the implementation of the Just In Time system.
3. Assign values to input data based on connection strength.
4. Evaluation of relationship matrices.

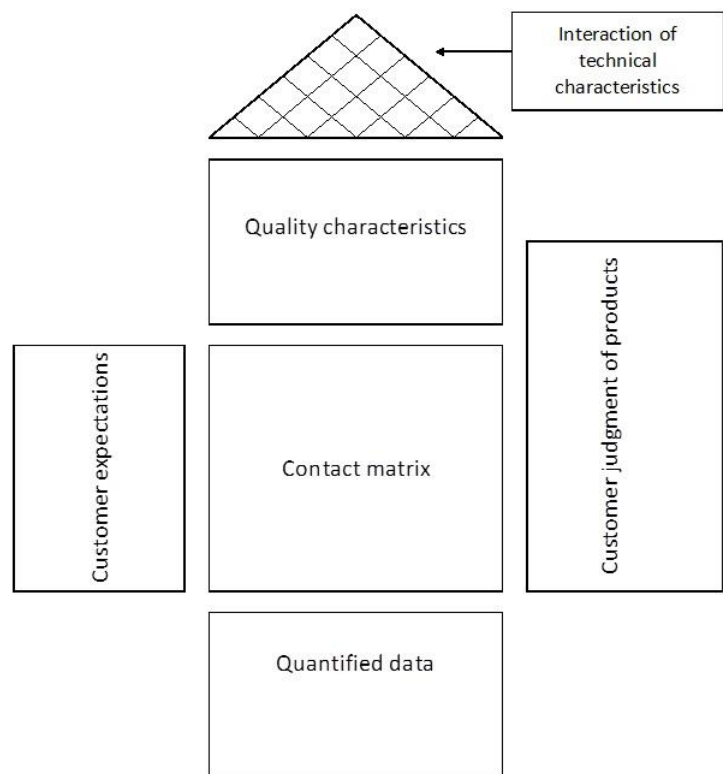


Fig. 1. House Of Quality (HOQ)

4.1. Examining the interaction between marketing and logistics

For the method to be applicable, it is first necessary to identify the marketing parameters that interact with the logistics sub-processes [19]. For this, I chose the marketing mix 7P [20].

Table 1. The interaction of the elements of the marketing mix on logistics

Marketing mix (7P)	Impact on logistics
Product	Product development is emphasized because the new product increases logistics costs (warehousing, shipping).
Price	The price change has a significant impact on the demand for the product, thereby affecting the entire logistics system.
Promotion	As a result of marketing activity, turnover could increase, which generates an increase in logistics costs and an expansion of logistics services.
Place	The number of distribution channels has a significant impact on lead time and logistics costs.
People	The staff involved in customer service has a significant influence on the judgment of the company, and thus on all processes.
Process	Processes related to customer service: technology used, flexibility, lead time, inventory, etc.
Physical evidence	The environment of the product / service could determine the assessment of quality.

Knowing these, you could fill in the relationship matrix based on the body of the QFD matrix. In this matrix, the interaction of the two disciplines could be examined within the framework of a relevance study. To examine the interaction with the elements of the marketing mix, I choose JIT from the logistics strategies. As I have already described in Chapter 3, this system is often introduced in companies in error, without prior examination of the logistics environment.

To illustrate the use of the method, I prepared “A” and “B” relationship matrices within the framework of a focus group study with experts, after which the usability in the field of marketing logistics could be clarified after the analysis of their relevance relationships. These relationship matrices are only examples of completion, showing the level of relevance of the indicated logistics and marketing parameters as well as sub-processes specifically for a given product. For specific products with different needs and another focus group, relevance levels may take on different values.

During the evaluation of the relationship matrix for “A” and “B” products, I examined the main elements of the marketing mix in terms of the basic conditions required for the development of a JIT system. In the case of testing for a given product, the level of relevance of the given elements and sub-processes could be observed, so the applied test could clarify the applicability of Just In Time when introducing a given product.

5. COMPUTATION EXAMPLES

5.1. Analysis of the relevance test of product “A”

In order to demonstrate the applicability of the method, I first describe the effects of the parameters included in the relevance study on each other.

Price (α^2) and constant production volume (β^1) assume a value of 2. This means that price has a significant impact on production volume. For example, if there is a sudden price increase, demand is likely to fall, so continuous production will only increase inventory. However, the price decrease is expected to generate higher demand, and demand for the product may increase.

Where the values are mostly 1, that parameter has a moderate effect on each other, so compromises could still be made regarding its application. For example, people (α^5) and reliable suppliers (β^{10}) influence each other.

If customer service receives a report that delivery is unsatisfactory to the customer, they could review their suppliers, but they could also investigate their processes, as in some cases, the problem stems from the processes. So if a complaint is received, customer service and management may decide to replace your supplier. However, you could also choose to review internal processes depending on the situation.

Where a value of 0 is taken, those elements do not affect each other, thus no special change is required; it is acceptable in any form for the implementation of JIT.

		Essential elements for implementing JIT system											
		β_1	β_2	β_3	β_4	β_5	β_6	β_7	β_8	β_9	β_{10}	β_{11}	β_{12}
Marketing mix (7P)	α_1 Product (development, availability)	2	1	1	1	0	1	1	2	1	0	1	2
	α_2 Price	2	0	0	0	0	0	0	1	0	1	1	1
	α_3 Promotion	2	1	1	0	0	0	0	1	1	2	2	2
	α_4 Place (number of distribution channels)	2	0	0	0	0	0	1	1	2	2	0	2
	α_5 People (customer service)	1	0	0	0	0	0	2	0	0	1	1	2
	α_6 Process (manufacturing technology, lead time)	2	0	0	1	0	1	2	2	1	2	1	2
	α_7 Physical evidence	0	0	0	0	0	0	1	2	0	0	2	1
	The average of the column values	1,57	0,29	0,29	0,29	0,00	0,29	1,00	1,29	0,71	1,14	1,14	1,71

Fig. 2. The relationship matrix used to test the relevance of product “A”

Legend	
2	Significantly relevant
1	Moderately relevant
0	Neutral / not relevant

Fig. 3. Legend

In addition to examining the level of relevance of specific elements and sub-processes, the analysis along the columns helps to shed light on whether the chosen logistics strategy, in this case, JIT, is appropriate for a given product. Parameters that are mostly 2 in the column support the introduction of JIT for a given product, such as constant production volume (β^1) and strong IT connection (β^{12}) in the present study. However, these two elements also appear in other logistics strategies, as both are important in the field of production.

In accordance with the requirements of the system, it must be further tested whether the processes related to the product are adequate for the system to function. Where it is mostly 0, that parameter is less relevant for the production of the product in a JIT system. In the present example, we see that there are also 5 parameters ($\beta^2, \beta^3, \beta^4, \beta^5, \beta^6$) that are typical of the Just In Time system and take a value of 0 in almost every location, so in JIT these elements are basically built-in, but the production of this product does not require these sub-processes.

Based on this, it is not yet possible to clearly decide whether the given system is suitable for the logistical service of the product, therefore we continue with the examination of the columns. We create average values that, at first glance, do not make it clear whether the introduction of JIT is supported or not. So the value of column β is the average of the values of α in that column. In this case: $\beta^7 = 1.00$; $\beta^8 = 1.29$; $\beta^9 = 0.71$; $\beta^{10} = 1.14$; $\beta^{11} = 1.14$

Based on the analyzes so far, it could be seen that there are 2 basic elements supporting JIT systems, most of which are of significant relevance. The value of 5 columns is almost zero and the value of another 5 columns is around 1 on average. Based on this, it could almost be clarified that the Just in Time system is not the right logistics strategy for product “A”.

However, in order to be able to decide on the adequacy of the logistics strategy for a given product, we supplement the table with the average of the results in the columns. If the end result is greater than 1, the chosen logistics strategy is likely to be effective for that product, but a review of the subprocesses in the low-average columns is still necessary.

If the result is less than 1, then it highlights that for product “A”, a JIT logistics strategy cannot be implemented cost-effectively. In this case, it is likely that the product will require a different logistics system.

5.2. Analysis of the relevance test of product “B”

In the case of product “B”, it could be seen that the given parameters take on a completely different value during the relevance test than in the case of product “A”. The values are determined taking into account the specifics of the product in each case.

Accordingly, the relationship between the elements of the marketing mix and the parameters required to implement JIT also shows a different level. The price (α^2) and the constant production volume (β^1) also take a value of 2 in this case, as consumers are price sensitive. In the present case, it is at the intersection of the flow arrangement (β^5) and the processes (α^6) 2, which shows that the physical design plays a significant role in the given environment. However, there are significant differences in the level of relevance of additional elements and parameters, which may result from product expectations such as lead times, individual needs or small series production, manufacturing technology, quality, etc.

		Essential elements for implementing JIT system											
		β^1	β^2	β^3	β^4	β^5	β^6	β^7	β^8	β^9	β^{10}	β^{11}	β^{12}
Marketing mix (7P)	α^1 Product (development, availability)	1	2	2	2	2	2	2	2	2	2	2	2
	α^2 Price	2	1	1	2	2	2	2	2	2	2	2	2
	α^3 Promotion	2	0	1	0	0	1	2	2	2	2	2	1
	α^4 Place (number of distribution channels)	1	1	2	0	1	0	2	1	2	2	0	2
	α^5 People (customer service)	1	0	1	0	1	0	1	1	2	1	1	2
	α^6 Process (manufacturing technology, lead time)	2	2	2	2	2	2	2	2	2	2	2	2
	α^7 Physical evidence	2	1	1	1	1	2	2	2	0	0	2	1
	The average of the column values	1,57	1,00	1,43	1,00	1,29	1,29	1,86	1,71	1,71	1,57	1,57	1,71

Fig. 4. The relationship matrix used to test the relevance of product “B”

Legend	
2	Significantly relevant
1	Moderately relevant
0	Neutral / not relevant

Fig. 5. Legend

In the case of product "B", the analysis along the columns must also be performed. The constant production volume (β^1) and the strong IT connection (β^{12}) are of great importance in this case as well, as each of these parameters is a determining element of logistics.

However, it could also be seen that the arithmetic mean of each of the basic elements that could be used to implement a JIT system is above 1. This means that based on customer expectations for product “B” and product characteristics, it is likely that the Just In Time system could be properly applied as a logistics strategy. Before making a final decision, it is recommended to perform a more thorough examination of β^2 , β^3 , β^4 , β^5 , β^6 for columns below 1.5, thus clarifying the shortcomings of the logistics environment, and supporting the design of logistics strategies.

The research system created during the investigation primarily supports the development of marketing logistics strategies: in the field of trade to meet customer expectations, and in an industrial environment, mainly in areas where custom-made products are manufactured. By using it, logistics processes could be mapped and customer-defined goals could be more easily achieved, and it also helps to identify shortcomings in the logistics environment, helping to collaborate with the marketing department. It could be used as a decision tool in developing logistics strategies and in reviewing existing logistics strategies.

6. CONCLUSION

Nowadays, marketing plays an increasingly important role, and at the same time, the importance of logistics has become more significant, as the product you want to buy must also be delivered to the customer. The effects of marketing could be traced along the supply chain, so nowadays it is necessary to introduce a marketing logistics strategy in companies.

In this article, I analyzed the interactions between marketing and logistics and described the method of QFD technique. Then I demonstrated its applicability in the field of logistics through a specific example based on a focus group study. I performed a relevance analysis of the elements of the marketing mix with the basic requirements of the Just In Time system so that the shortcomings of the Just in Time feasibility and the logistics environment could be clarified.

A properly chosen logistics strategy could also result in adequate customer service and significant cost reductions. The development of the marketing logistics strategy (in a commercial, industrial environment) could be supported with the help of the developed relevance study. It also contributes to the decision-making mechanism in the development of logistics strategies and helps to review existing logistics strategies and identify gaps in the logistics environment. The presented examples clearly highlight that logistics should be treated as a separate field and that cooperation with the marketing field is essential, so in the long run, the development of marketing logistics strategies is necessary for effective customer service. The described method could be used in logistics decision-making to avoid the cognitive biases generated by the marketing field.

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Letmein - A Study of Password Strength Estimators and Recommendations

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Abstract

Passwords remain the most prominent means of authentication for end-user systems, despite the development of many alternative mechanisms. Hence, ensuring the strength of passwords is essential. This paper focuses on the design and implementation guidelines for password strength estimators. It synthesizes studies on several aspects of password strength to develop universal design elements for password strength estimators and identify a standard key output metric for password strength. Further, it proposes a draft framework for the effective implementation of password strength estimators. It also presents the benefits of promoting the three pillars of password strength estimators – a universal design, a standard output metric, and a framework of policies and processes.

Keywords: password strength, password strength estimator, password, authentication

1. INTRODUCTION

Despite the development of several alternative mechanisms, passwords remain to be the most prevalent first line of defense against a security breach. Ensuring strong passwords remains a critical agenda for most sensitive systems. In a survey among managed service providers to understand the leading causes of ransomware attacks worldwide, 30% of the respondents cited weak passwords as a leading cause [1]. On 2018 World password day, Microsoft announced that it would deliver "a world without passwords," a promise not realized even today. Meanwhile, Twitter had to request 330 million subscribers to change their passwords in a hurry because of a software glitch that exposed passwords in an unencrypted format [2]. Facebook had admitted to a significant breach in 2018 when it announced an attack had compromised around 50million accounts. The founder of Facebook had his accounts broken, too; he came in for some criticism when it turned out that he had used a weak password - that too across many of his accounts. This year, lots of users took to zoom amidst a work from the home regime. These users were shocked when reports indicated that the credentials for half a million zoom accounts were on sale on the dark web. These events have emphasized the problem of weak passwords. They have pointed to the inadequacy of current processes and tools to deliver consumer passwords of sufficient strength.

Many sensitive systems, including social media platforms and banking sites, try to 'nudge' the user to go for stronger passwords. They employ password strength rules like a combination of upper and lower cases, incorporation of numerals, and special characters. However, there are several limitations to this approach. Many times, these rules do not create a strong password. 'Dave-1982' may be evaluated as acceptable, while 'RxCi9zt' is considered weaker [3].

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Many system providers, therefore, use password strength estimators. However, the strength estimators are not standard either – a password of ‘moderate’ strength as per one estimator may be considered ‘strong’ by another [2,4]. The result is much confusion. Moreover, there are no commonly accepted design benchmarks for password strength estimators. The paper addresses this subject in security research.

Research indicates that password strength estimators can encourage users to choose stronger passwords [5]. Furnell et al. found a 30% drop in the choice of weak passwords with guided usage [2]. Universal adoption of a good password strength estimator can enhance user passwords' strength and reduce security breaches. It will help businesses to minimize damage to their finances and reputation from possible data breaches.

The paper addresses the following research questions:

- RQ1: What are the universal design elements that would optimize the performance of password strength estimators?
- RQ2: What should be the ideal ‘standard output metric’ for a password strength estimator?
- RQ3: What policies and processes would enable broader and more effective adoption of password strength estimators?

2. THEORETICAL FRAMEWORK

In this paper, we argue that it is desirable to promote the adoption of a universal password strength estimator for substantially improving consumer passwords' strength. The adoption depends on three elements of the estimators coming together - the first is the convergence of its design elements. The second is the identification of a standard output metric (of password strength) for the user. Last is promoting an appropriate framework of policies and processes (for enforcing the password strength).

2.1 The Design Elements

A password strength estimator is the result of a series of design choices. These design choices include password length and complexity policy, the introduction of dictionary checks (selection of dictionaries), client v/s server-end compute, incorporation of dynamic password policies, and mechanisms to compensate for cultural proclivities. The universal password strength estimator ought to have standard design choices that we derive from cybersecurity best practices. Hacking methods used for data breaches are evolving. Password strength estimators need to mitigate those evolving risks by incorporating related nuances in their design.

2.1.1 Password length and complexity

Password strength estimators typically implement 6-to-8-character length passwords and enforce upper case, lower case, digits, and special characters (LUDS) character sets [5, 6]. The aim is to improve resistance to hacking attacks. An impressive study of password policies covering 12,000 passwords Kelly et al. [7] explored the effect of hacking attacks (using Weir-algorithm) against the following password composition policies.

- *Basic8* – password must have at least eight characters.
- *Basic16* – password must have at least sixteen characters
- *Comprehensive8* – password must have at least eight characters, including an uppercase and lowercase letter, a symbol, and a digit.
- *BlacklistEasy*- password must have at least eight characters. It may not contain a dictionary word.
- *BlacklistHard* – same as BlacklistEasy, except that dictionary was enhanced to a 5 billion word one, with inputs from known databases of leaked passwords, increasing the strength of the blacklist.

The study returned the astounding finding that over a trillion guesses, ‘basic16’ outperformed all other policies. The paper reported, "basic16 provides the greatest security against a powerful attacker, outperforming the more complicated comprehensive8 condition" [7]. In other words, extending the number of characters is a better strategy

than complicating the password character combinations. Many users find it difficult to remember the passwords mandated by the password strength estimators because of the combination of upper, lower digits, and special characters. A passphrase of 16 characters, while being more secure, might also be easier to remember. However, we do provide the caveat that grammatical structures diminish long passwords' security [8].

2.1.2 *Incorporating dictionaries*

Dictionary attacks form an essential part of the hacking repertoire. Incorporating dictionaries into the password strength estimator is, therefore, a necessary countermeasure. We can design the password strength estimator checks with increasing complexity. The first level detects and rejects popular passwords (like 'Password1'), while the second is to check the password strength against a simple brute force method. The time consumed by the cracking algorithm to guess the password should ideally be higher than the password expiry time. In other words, if the password expires every three months, it must have the strength to withstand brute force cracking attempts without yielding for a minimum of three months. The resilience is a function of the password's length and complexity (character combinations). These levels of checks will most probably prevent trivial passwords. Now we turn our attention to non-trivial but relatively weak passwords. The third level incorporates dictionaries, with the password strength estimator using techniques like Markov chain models or Weir-algorithm to compute the probability of guessing the user's password [5, 9]. The dictionary can be enriched by including actual databases of passwords breached and available in the public domain (e.g., LinkedIn, RockYou5). A further refinement is to generate enhancements to dictionaries by generating additional probable passwords using 'mangling rules' (e.g., users add digit or symbol often at the end of a specific word) or applying leet transformations. Leet is an alphabet used in the visual similarity between a letter and digit or symbol (e.g., 3 resembles laterally inverted E). Some users take advantage of leet transformations to use more character sets. Last, password databases of the local language can improve the password strength estimator [10].

2.1.3 *Dynamic policies*

A password strength estimator promotes the password policy of the merchant. If this policy is static and consistent, it becomes increasingly transparent. Passwords that are considered healthy may have similar structures. Since the estimator nudges every user to choose strong passwords, the password space becomes 'uneven', as per the enforced policies.

Let us now imagine that a hacker has managed to download at least parts of a hashed password table from a sensitive end-user system. Let us also imagine that the affected system employs a password strength estimator to help the users choose a strong password. The hacker turns to a set of publicly available text passwords (not hashed), feeds those passwords to the password estimator, and comes up with a selected list, where we rate all the passwords as strong. The hacker can now train the cracking algorithm with those curated 'strong' passwords, banking on the 'uneven' nature of the password space. Empirical proof exists that this 'selective training' enhances the algorithm's ability to crack hashed passwords [11]. To sum up, if the password space becomes uneven due to a password strength estimator's static policy, then the hacking algorithms can exploit it.

A dynamic password policy generator creates and recreates password policies dynamically to maintain diversity in the password database. It prevents the accumulation of structurally similar passwords. Policies that are re-generated serve to balance the distribution of password characteristics. The generator works through algorithms that store the previous policies and the corresponding password distribution characteristics in its database (we compute the diversity measure statistically) and always 'explore' new and creative patterns of passwords that can balance the distribution. It results in a deliberate, planned refresh of password policies. Password sets generated through the dynamic and unpredictable policies show better cracking resistance [11].

2.1.4 *Cultural aspects*

Creating and using passwords is a human activity; success in implementing robust password policies depends on understanding and compensating for human weaknesses and vulnerabilities. Hence, we want to focus on the cultural aspects of password creation. The current password strength estimators work across all countries and cultures and therefore have no features that compensate for cultural vulnerabilities. For example, it makes sense to incorporate dictionaries in the local language. A study to test the effect of incorporating Czech and Slovak language dictionaries to the popular zxcvbn password strength estimation engine yielded positive results. The engine's estimates of weak passwords became significantly better [10]. This phenomenon is not hard to understand. Most non-English speakers may incorporate words and phrases from their language (or mangled versions) as passwords. If the strength estimator

uses a pure English dictionary, these passwords may be deemed very strong. However, if we incorporate the local language dictionaries into the algorithm, they may turn out as awfully weak. This artificial inflation of password strength is a severe consequence for countries like India, where regional languages abound.

Secondly, the behavior of people belonging to different cultures is distinct when creating passwords. In everyday contexts, it is challenging to study or come to conclusions on this. However, an opportunity opened up when passwords of a multinational Middle East bank with demographically diverse customers were compromised [12]. The leak was rich in metadata, making it possible to analyze passwords created by people of various cultures, e.g., US, Canada, Egypt, Arab, Filipino, Indian, and Pakistani. The study came up with empirical evidence that cultural differences lead to predictable patterns in password creation. Indians and Pakistanis are more likely to include their names in the passwords, while Filipinos incorporate months' names. English speakers prefer the special character "!" while Filipinos prefer "_." Arabs frequently integrate mobile numbers in their passwords; they also tend to construct passwords from keys on the same keyboard row [12]. Even the most commonly used passwords showed distinct culture-oriented trends. Password strength estimators need to recognize these tendencies and assimilate them into their dictionaries and blacklists to create consistent, high-quality results across populations and cultures.

2.1.5 *Endowment effect*

The endowment effect manifests itself through “reluctance to relinquish owned artifacts, even when a viable or better substitute is offered” [13]. People over-value an endowed artifact. Studies in cybersecurity have found that the endowment effect is the cause for change resistance and lack of compliance [13]. In this paper, we focus on the impact of the endowment effect on personal password creation. Studies have found that over three-quarters of the respondents reuse their passwords [7]. Currently, password strength estimators are unable to detect this because they work independently for each system. The distributed architecture fails to detect password reuse. However, offering universal password strength estimators as a service (incorporated by all consumer-facing systems like banks) can bring down weak passwords because of the endowment effect.

2.1.6 *Client v/s server implementation*

Password strength estimators can be configured purely on the client side. The advantage of this architecture is the gain in performance. Users who want to start a new account or change an existing password want to finish the task fast. Hence the performance is indeed a relevant criterion for the design. On the other hand, dictionaries and blacklists are more amenable to being configured at the server end. Password leaks appear regularly, and it would be far easier to keep the central password check database updated regularly. Dynamic policies expect exploration algorithms to be run at regular intervals to come up with new password policies. It is more comfortable with a central database. In short, the designer of the password strength estimators will need to balance the convenience of speed with the nuanced performance offered by a server end implementation. This paper recommends a hybrid architecture where the system performs the client-side checks first and subsequently controls transfers to the server-side. This architecture can quickly identify trivial or weak passwords without resorting to server-side checks while still creating the capability to check non-trivial passwords through specialized dictionaries or black lists.

3. STANDARD OUTPUT METRIC

For promoting the universal adoption of an adequate password strength estimator, we need to identify the output metric of a password strength estimator. The current estimators differ on what they present to the end-user. Some estimators accept or reject a password. Some others show red, yellow, and green zones for the password input (corresponding to weak, medium, and robust classification). However, their output is not consistent with each other. For example, Microsoft v2 and v3 checkers assign their best scores only to a tiny percentage of their passwords, but Google gives its best score to about 66% [14]. Most of the password strength estimators are measuring compliance with their policies. As we have seen in this paper, these diverse policies may themselves not be optimal to achieve maximum password strength.

Meanwhile, the researchers have remarked that they "analyzed the performance of meters from 11 widely used websites and found them to be inconsistent and prone to rating poor choices as being acceptable" [15]. The current password strength estimators create confusing and often misleading reports on password strength [14,16]. Therefore, there is a need to adopt a better output metric for password strength estimators, compute it using standard algorithms, and consistently present it to the end-user.

Password entropy is often used as a metric to measure password strength. Entropy represents the number of bits required to represent the information contained in the password.

Password entropy $E = \log_2(R^L)$ where E = entropy, R = the pool of unique characters in the set, and L = number of characters in the password. For example, if it is an 8-character password incorporating only lowercase English alphabets, then $R=26$ (number of lowercase alphabets) and $L=8$. Therefore, entropy $E = \log_2(26^8) = 37.6$.

(We consider passwords with entropy values above 36 reasonable, and those with values above 60 as healthy)

In practice, entropy values rarely represent the real strength of a password. A password like 'password' has an entropy value of 37.6 (as per the calculation above); we will consider it as 'reasonable.' In any real-life scenario, hackers would crack it within a fraction of a second. The number of bits of entropy does not mitigate the weakness of this password. It turns out to be weak simply because too many people use it, and therefore, it appears pretty high up on any hackers' database of possible trivial passwords.

The real strength of a password is its resistance to being hacked. If a password is hard to crack by various hacking algorithms, it can be deemed strong. Therefore, the most common metric for evaluating password strength is 'guessability' [3]. Traditionally, the password strength estimator will have to run its cracking algorithms and calculate the number of guesses in real-time to assess the password's guessability. This process is nonoptimal when many trials need to be performed (for non-trivial passwords, using dictionaries). Kelley et al. [7] offer an elegant alternative. Weir-algorithm is used as the cracking algorithm, based on which a guess-number calculator is pre-built. The guess number calculator creates a look-up table for possible passwords and their guess values based on the passwords' underlying structure. When the user inputs the proposed password, the guess number calculator takes only a few seconds to return the guess value [7]. The guess number calculator must be re-implemented when the underlying cracking algorithm is modified, or the dictionaries are enhanced. Thus, the guessability score can be mapped to weak, medium, and strong descriptors (of password strength) and presented to the user.

4. POLICIES AND PROCESSES

Password breaches for critical user systems like banks, insurance companies, retail platforms, and even social platforms have significant potential for financial and reputation loss for organizations and end-users. Therefore, organizations like NIST in the USA and similar bodies in Europe and other parts of the world would be well justified to mandate guidelines for using universal password strength estimators. In this paper, we propose the following draft guidelines:

- Reputed and independent organizations with proven technical skills can be encouraged to launch paid services to test and certify password strength and resilience. In other words, password strength estimators can be established as services certified by Govt. authorities (somewhat like payment gateways). Govt. authorities can periodically test and certify these services on the fidelity of their algorithms and dictionaries. Disclosure norms can bound these services for security incidents involving user credentials.
- Merchants and platforms (e.g., banks, retail, gaming sites, social platforms) can subscribe to these services and invoke them through standard APIs from their websites or mobile apps. Ideally, merchants can provide a choice of two or three such services to the end customers (similar to the freedom to choose a specific payment gateway).
- The services will allow the users to open their accounts and offer feedback on their password choice. It would also help the user reset the password (reset is preferred to recovery, a more secure mechanism). Since it is a paid service, there would be healthy competition. Anyone user would tend to subscribe to one password strength estimator service across all the websites used by the individual. The service shall prevent individuals from reusing passwords because it will keep track of their passwords across all the systems. It also opens up opportunities for personalizing the service and compensating for cultural vulnerabilities.
- Depending on the merchant's or the website's sensitivity, the password strength estimator service can auto-configure the design elements (a sample given below in Table 1). For example, we can configure a bank with high sensitivity and a daily news subscription with low sensitivity. Some of the configurations can be made optional for the end-user.

Table 1. Suggested Configuration of Design elements

Design Element	Sensitivity Low	Sensitivity Medium	Sensitivity High
Password length and complexity	Comprehensive8	Comprehensive8	Basic16
Incorporating dictionaries	No	Mandated	Mandated with mangling and leet transformations
Dynamic Policies	No	Mandated	Mandated
Cultural Aspects (Neutralize)	No	Optional	Mandated
Endowment Effect (Neutralize)	No	Optional	Mandated
Client/Server-side Implementation	Client-side	Client + Server	Client + Server

Note: The sensitivity columns above can follow the ‘assurance level’ as defined in NIST digital identity guidelines [17].

5. DISCUSSION

The pervasive use of technology has made password security a hot topic. Passwords still offer the first line of defense against unauthorized access. However, password breaches occur regularly and result in varying amounts of damage to the organizations and end-users. Password strength estimators offer a credible mechanism to improve the security of passwords [5]. This study contributes to both theoretical and practical possibilities for the broader adoption of password strength estimators.

5.1 Implications for theory

Most of the studies focus on the technical aspects of password security. The best laid technical frameworks can come up short if they do not incorporate human elements of security. For example, recognizing and compensating for human proclivities like the endowment effect are as crucial as creating algorithms to ensure an ‘even’ password space. This study offers a balanced approach to configure the design elements of password strength estimators. The resultant framework deals with the technical and human aspects of password security; its applicability is universal. Second, the study proposes a commonly agreed output metric for password strength. Presently, password strength estimators confuse the end-users with mutually conflicting reports. A uniform metric can contribute to consistent perceptions of password strength. Third, the paper suggests the idea of a password strength estimating service, which can auto-configure the design elements based on the sensitivity of the application. This service can balance the complexity of the underlying algorithms based on the context.

5.2 Implications for practice

This paper has several implications for management practice. First, it focuses on the strength of passwords, which is invariably the most common security and authentication mechanism for most consumers. Global e-commerce from 2021 to 2025 is projected to grow in double-digit compounded annual growth rate (CAGR) in countries like Turkey, Argentina, Indonesia, and South Africa [22]. Increased penetration of e-commerce demands better security for end-consumers. Password strength estimators provide adequate protection for end consumers. But non-standard and confusing mechanisms defeat the underlying purpose of enhanced security. This paper offers a unified framework for the design of password strength estimators, which the industry can adopt for their consumer-facing software.

Second, this paper suggests a practical way to deliver and consume password strength estimation as a service. It offers thought starters on a standard policy framework in this area. The study is valuable for management practice because security breaches drain organizations of management and financial resources. A unified and effective mechanism to ensure the strength of passwords would reduce compromise and allow organizations to focus on their areas of core competence. The study is valuable for the end-users too. On average, we estimate that internet users maintain 25 accounts that require a password. So, the cognitive load on the users is considerable [18]. A unified approach will improve security and alleviate significant pain to end-users.

6. CONCLUSION

This paper focuses on improving the quality and consistency of password strength estimators as suggested mitigation to repeated password breaches faced by end-users. The paper approaches this problem in three distinct steps. First, it analyzes the universal design elements that would optimize the performance of the password strength estimators. These elements are password length and complexity, incorporating dictionaries, dynamic policies, cultural aspects, the endowment effect, and client-server side implementation. The paper discusses the implications of design choices across each of these elements. For example, the best-performing password length and complexity algorithm is basic16. Incorporating local language dictionaries and opting for mangling and leet transformation features improves performance. Automated dynamic password policies create an 'even' password space, which makes hacking difficult. Neutralizing cultural aspects and endowment effect improves security performance. Finally, a combination of client and server-side implementation optimizes the speed and performance of password strength estimates.

Second, the paper addresses the issue of a standard output metric for any password strength estimator. A standard output metric is essential to provide standardization and transparency to the end-user. Here, the paper recommends the use of 'guessability' as the appropriate metric and suggests an efficient way provided by Kelley et al. [7] to implement it. Third, the paper discusses policies and processes to ensure broader and more effective adoption of password strength estimators. It proposes the concept of 'password strength estimation as a service, which reputed software agencies can offer with certification from the statutory authorities. Corporates like banks, retail, etc., can subscribe to those services and deliver those to the end-consumers. These services can have the ability to auto-configure the design elements based on the context of software use. For example, design elements can be wired for maximum security in the case of a bank application. These services can use the standard output metric of guessability for providing a transparent and consistent end-user experience.

To summarize, the paper provides recommendations on the choice of design elements that optimize the effectiveness of password strength estimators, recommends a standard output metric for password strength, and initiates a discussion on policies and processes to operationalize those. Most of the extant studies restrict to exploring just the technical aspects of password security. This paper takes a more holistic approach.

The proposed concepts, including the services themselves, need to be prototyped and empirical evidence of their effectiveness generated. Future studies can go in-depth on some of the solution dimensions identified in this paper. For example, cultural vulnerabilities can be studied further, and regional or countrywide norms can be proposed. Similarly, policies and processes can get more nuanced based on the context of use, such as mobile devices. Passwords will continue to be used by the end-users for the foreseeable future. Preventing password breaches depends on bringing the design elements together, introducing a commonly accepted output metric, and setting the right policies and processes. We can achieve significant improvements in end-user security by focusing our efforts on these three pillars. With the explosive growth of consumer IT (social media, online shopping, fintech, work-from-home), enhanced password controls can bring considerable cybersecurity gains.

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Making A Meal of it: Discursively Constructing The Agency of The Meal Kit Consumer

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Abstract

Meal kits delivered to the home have become increasingly popular in recent years, particularly during the COVID-19 virus pandemic. Several companies now offer these through monthly subscription with a vast range of ingredients and easy-to-follow recipes based on chef-inspired meals that customers can cook themselves. This paper examines the marketing of meal kits from three UK companies in terms of how they discursively construct the agency of the consumer. Three main interpretative repertoires are analysed: (i) the consumer as a creative and committed cook, (ii) the ethical consumer committed to sustainability; and (iii) the consumer as an efficient time-saver. The rhetorical construction of each of these repertoires is considered in turn and the paper concludes by considering how they coalesce together as a persuasive marketing strategy.

Keywords: meal, kits, discourse, agency

1. INTRODUCTION

The Covid-19 virus pandemic and resulting behavioural restrictions across national populations that have impacted the food industry, and in particular dining out in restaurants. However, while this has been problematic for the restaurant industry it has also created more of an opportunity for companies that produce home meal kits (Estrella, 2020; Webb, 2020). These ready to cook boxed kits involve a set of raw or sometimes minimally prepared, ingredients (cut, trimmed, peeled, washed etc.) that require cooking once delivered to the home (Costa et al., 2001). These kits pre-date the COVID-19 pandemic and were originally developed as a means of offering the consumer the convenience of home cooked recipes, often to restaurant standard quality, without shopping for ingredients and with easy-to-use recipe cards (Levy, 2018). It is now possible to purchase meal kits on a subscription basis with company websites offering tips and blogs and often with recipes that stress ease and relatively short cooking times. Moreover, these companies stress the fact that the pre-portioned ingredients save on food waste and spending time on supermarket shopping. Instead, they offer the consumer the appeal of cooking high quality meals with an appeal to ‘doing cooking’ and enjoying the food experience in the convenience of their own home (Hill & Maddock, 2019). In offering selected fresh produce with a variety of meal plans and recipes, the meal kit companies tend to stress the healthy nature of the produce they offer the consumer rather than traditional convenience foods that have sometimes become associated with highly processed ingredients with artificial preservatives and so on. In this regard, meal kits can be considered as “convenient food provision, cooking and eating” (Halkier, 2017, p. 136).

2. MARKETING MEAL KITS

Meal kit providers are in the business of offering the consumer convenience and in so doing conform to traditional marketing associated with the likes of frozen food or ready meals in terms of the promise of speed, ease of cooking,

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and freedom of choice (Smith, 2001). Providers such as Gousto, Hello Fresh, and Feast Box stress these features in their marketing, and in particular appeal to the “time-poor” consumer (Brewis & Jack, 2005). Such appeals are attractive when combined with a discourse in which meal kits are presented as offering the consumer “new combinations and configurations of doing” (Shove, 2009, p. 26) in terms of the relationship between food provisioning and cooking. As such the marketing of meal kits provides an alternative food script for the consumer (Block et al., 2011) as well as their agency and subject positions (Hall, 2000; Serazio & Szarek, 2012). While for some, this type of alternative script is something to be critiqued in terms of the power imbalance in favour of the meal kit provider and a distancing of food provisioning from the consumer (Hill & Maddock, 2019), it can also be considered in terms of the rhetorical construction of consumer agency. In other words, a key focus of this work is on how the consumer’s agency is “worked up” in the marketing material such that the purchase of meal kits is presented as a form of enhanced agency in relation to key issues in today’s society. These come in many forms, but previous research has identified some of the main ways in which they are marketed as addressing these issues. Perhaps one of the most pressing and obvious issues is that of food waste and this is often related to over-buying groceries when supermarket shopping, both in-store and online. There has been a growing concern at the amount of food waste, particularly in developed nations. Meal kits can therefore be marketed as assisting consumers by saving them time grocery shopping and helping them in reducing food waste through portion control and ingredient usage (Troy & Acosta, 2017). It is also the case that the time-poor consumer can be receptive to the marketing of the idea of cooking with meal kits with the benefit of a desirable way to increase quality time with family (Hill & Maddock, 2019). Another aspect in the marketing of these kits lies in the idea of a being creative and skillful cook without the pre-requisite experience. In other words, the easy-to-follow recipes and instructions enable consumers to feel creative and confident in their cooking (Levy, 2018). There is also an element of learning culinary skills here but in the privacy of a home setting. Finally, and now rising up the agenda of consumer concerns is that of purchasing food that is marketed in terms of environmental sustainability. Recent research by Heard et al. (2018) found that on average, regular grocery life-cycle meal greenhouse gas emissions are 33% higher than meal kits. This kind of statistic presents meal kit providers with a key marketing message in terms of sustainable food provision.

The features outlined above can make meal kits a highly marketable product, albeit one aimed at a segment of the population with sufficient disposable income and cultural capital (Bourdieu) to purchase them. From the point of view of the present study what is interesting is how this type of marketing is accomplished rhetorically and how it positions the consumer with an enhanced sense of agency in moving beyond food provision as a mundane activity towards one that speaks to the issues outlined above. The following section lays out the methodological position adopted in the study in examining this issue and the sample of material examined.

3. METHODOLOGY

The study involved data collected from the websites of three of the main UK meal kit companies: Gousto, Hello Fresh and Feast Box. The marketing statements made on these websites, including company claims about their meal kits, customer testimonials, and blog entries were drawn upon in order to produce a set of themes that could then be analysed in more detail. Thus, the data was analysed in two stages. The first involved informed a broad thematic analysis (Braun & Clarke 2006) which consisted of reading, re-reading and coding the data set. These initial codes were based upon were collated in order to establish an outline of potential themes that were derived from the both the online company material as well as the academic literature outlined above.

The themes were then examined as potential “interpretative repertoires” underpinning the meal kit marketing rhetoric. An interpretative repertoire can be defined as a “recognisable routine of arguments, descriptions and evaluations, distinguished by familiar clichés, common places, tropes and characterizations of actors and situations” (Edley & Wetherell 2001, 443). These were considered in terms of the meal kit consumer and the ways in which their agency was constructed, either directly or indirectly. The relevant exemplars below are drawn from across the three company websites that most clearly illustrate each of interpretative repertoires identified.

4. ANALYSIS

The foregoing analysis of the various company website promotional material considers how the identity and agency of the consumer is discursively constructed as paramount. This can be examined under three main interpretative repertoires: (i) the consumer as a creative and committed cook, (ii) the ethical consumer committed to sustainability; and (iii) the consumer as an efficient time-saver.

4.1. The creative and committed consumer

In order to market meal kits effectively, the consumer must be discursively positioned as an active agent in the cooking process. In other words, the agency of the consumer must be forefronted in such a way that the creativity involved in cooking can be identified with. This is apparent in the following promotional material.

Gousto

Butter chicken or 'murgh makhani' is a mild Indian curry that the whole family will love. You'll create a fragrant, silky smooth base for succulent chicken with tomato, spices and golden-fried onion, before serving over fluffy coriander rice. Butter than a takeaway!

We've taken inspiration from the flavours of a 'parmigiana' – a classic Italian baked aubergine dish – for this easy, cheesy, incredibly tasty pasta bake. You'll combine golden-fried aubergine, rich tomato sauce, pasta and two cheeses to create a truly delicious meal the whole family is sure to love.

What is analytically interesting in this material is the active use of the contacted “You’ll” based on the pronoun you and active “will” with the immediately following verb “create”, all of which constructs the agency of the consumer as a creative cook. This contacted form also is less direct than “you will” and as such fits with the informality of the descriptions “fragrant, silky smooth base” and “easy, cheesy, incredibly tasty pasta bake”. It is also worth pointing out how these descriptions make copious use of adjectives to describe the meals (“... a fragrant, silky smooth base.”; “... succulent chicken...”; “...golden-fried onion...”; “... fluffy coriander rice”; “...golden-fried aubergine, rich tomato sauce, pasta..”). This kind of over-lexicalisation serves the purpose of enhancing the marketing of the meals as of chef-grade standard.

This kind discursive construction can also be seen in other providers where the active and creative consumer-cook is also presented in the form of testimonials. In the examples below references to “enjoyment” related to the creative act of cooking.

Gousto

So... I'm about to gush... @goustocooking is AWESOME. It's made me cook. I love how zen it all makes me after a long day. The food is absolutely spectacular too. Just cooked my first ever authentic Moroccan tagine, which is my favourite food. I'm buzzing. Thanks Gousto.

I cannot thank Gousto enough. What a fantastic idea! I have always struggled with time and ideas around what to cook. Now I am producing delicious, fresh and 'made from scratch' meals for my family...

Hello Fresh

I'm enjoying receiving meals from HelloFresh, as the variety of recipes has rekindled my interest in cooking, choosing and cooking the recipes with my son has awakened an appreciation of cooking tasty meals without the hassle of shopping for the ingredients.

My husband does all the chopping and I cook which is great, Wide choice of meals so lovely not to have to decide what to have every day!!

Again, we can see how the agency of the meal kit consumer is foregrounded in terms of what they have produced (“Just cooked my first ever authentic Moroccan tagine...”; “Now I am producing delicious, fresh and 'made from scratch' meals for my family...”; “cooking the recipes with my son has awakened an appreciation of cooking tasty meals...”; “...I cook which is great...”). Allied with this construction of agency is the positive personal impact in terms of excitement (“I’m buzzing.”); coming up with ideas of what to cook (“I cannot thank Gousto enough. What a fantastic idea! I have always struggled with time and ideas around what to cook.”; “...Wide choice of meals so lovely not to have to decide what to have every day!!”); and returning to cooking as a pleasure (“...the variety of recipes has rekindled my interest in cooking...”). Using meal kits is therefore presented in terms of the activity of cooking as associated with pleasure and contrasted with life’s mundane issues (“I love how zen it all makes me after a long day.”;

“I have always struggled with time and ideas around what to cook.”; “...without the hassle of shopping for the ingredients.”; so lovely not to have to decide what to have every day!!”).

4.1. The ethical consumer committed to sustainability

Another way in which the agency of the meal kit consumer is constructed is in terms of their purchase as involving a commitment to sustainability.

Gousto

In our quest to make sure every meal leaves the world better off, we've received some very exciting news. A weekly Gousto box reduces your carbon emissions by a whopping 23% compared to buying the same food at a supermarket. <https://www.gousto.co.uk/blog/carbon-emissions>

If UK households replaced supermarket dinners with meals from Gousto for just one year, we could save 10.3 million tonnes of CO2.

That's the same as taking 141,910 buses off the road!

Hello Fresh

By giving you the exact amount of ingredients you need, we cut food waste. For many customers, food waste starts at the supermarket. Over-shopping often results in unnecessary ingredients (which are often over-portioned for the specific need) that don't get used and end up in the bin. At HelloFresh, we have a simple solution for this problem. Our ingredients are delivered to the consumer in pre-measured portions, which leave consumers with little to no food waste or leftovers. They receive and use exactly what they need based on their household size. We also educate our customers in meal planning and conserving the quality of food.

Feast Box

As a world food focused recipe box, part of our mission is to show that veganism isn't a flash-in-the-pan trend, it's an ethos that's been followed in many forms all over the world for centuries. Our recipes show off the versatility of plant-based ingredients like tofu, jackfruit and lentils, which deserve to be enjoyed in their own right, not just as 'meat substitutes'.

For every recipe you enjoy, we'll provide clean water pipes, chlorine tablets and emergency medical kits to communities suffering from severe malnutrition in over 50 countries around the world. For such a young company, we're incredibly proud to put this at the heart of everything we do.

We work tirelessly to minimise our environment footprint every step of the way. All our packaging is recyclable, compostable or biodegradable. Our insulation material is made from state of the art recycled denim offcuts, our BRC certified ice packs are reusable and our pods, box & paper bags are recyclable.

We've partnered with Give Back Box so that you can recycle the cardboard boxes we send you and donate to a local charity at the same time. Fill your empty Feast Box with unwanted clothing, shoes, books etc. Then print off a label using this link: [Give Back Box Label](#), drop the box at your nearest CollectPlus and send it (free of charge) to your charity of choice.

What is apparent in these extracts from company websites is the focus on reducing food waste. This can be accomplished in terms of giving agency to the consumer through comparison with supermarket grocery shopping (“A weekly Gousto box reduces your carbon emissions by a whopping 23% compared to buying the same food at a supermarket.”; “For many customers, food waste starts at the supermarket. Over-shopping often results in unnecessary ingredients (which are often over-portioned for the specific need) that don't get used and end up in the bin.”). A more direct approach positions the consumer in a more active role beyond consumption (“Fill your empty Feast Box with unwanted clothing, shoes, books etc. Then print off a label using this link: [Give Back Box Label](#), drop the box at your nearest CollectPlus and send it (free of charge) to your charity of choice.”). All of the meal kit providers construct the

agency of the consumer as a partner in the process of environmental sustainability, sometimes through using the possessives “our and “your” in referring to themselves and then the consumer (“In our quest to make sure every meal leaves the world better off.” [followed by] “A weekly Gousto box reduces your carbon emissions...”). In other cases, the partnership between company and consumer in engaging in sustainable consumption is fostered through the possessive “our” and generic “consumer” (“Our ingredients are delivered to the consumer in pre-measured portions, which leave consumers with little to no food waste or leftovers.”). It is also the case that categories of meal kit consumer, notably vegans, are portrayed as authentic in their food beliefs and choices, particularly in relation to environmental concerns (“...our mission is to show that veganism isn't a flash-in-the-pan trend, it's an ethos that's been followed in many forms all over the world for centuries. Our recipes show off the versatility of plant-based ingredients like tofu, jackfruit and lentils, which deserve to be enjoyed in their own right, not just as 'meat substitutes.'”). The use of the metaphor “flash-in-the-pan trend” and counter to this in terms of vegan ingredients being enjoyable in “their own right and not just as 'meat substitutes’” points to the agency of the consumer of these meal kits as more than a trend follower as an active and authentic agent.

4.2. The consumer as an efficient time-saver

Although much has been made of the time-poor consumer in the marketing of meal kits, less has been examined in terms of the positioning of the construction consumer's agency in terms of being efficient in saving time. The following extracts from the company websites draw the consumer into this world of speedy meal preparation as representing an efficient use of time.

Gousto

This ragù develops an incredible depth of flavour in just 10 minutes thanks to our British slow-cooked pulled pork. You'll make a super speedy tomato sauce, flavoured with roasted garlic paste, before stirring through quick cook spaghetti and a good scattering of cheese!

Dinner, but not as you know it. Our big red recipe boxes will help you whip up wholesome, impressive meals no matter your skill level, with all of the flavour and none of the fuss.

Hello Fresh

HelloFresh is great for busy lifestyle and saves you shopping for ingredients etc.

We deliver everything you need to create delicious dinners from scratch so you spend less time shopping!

Feast Box

Our goal is that when you next go travelling, you actively seek out the local delicacies and feel inspired to try them at home. We want you to spend less time tracking down hard-to-find ingredients and more time doing what actually makes you feel good: cooking and eating!

We've tested the recipe multiple times with novice cooks, and they really appreciate the clear instructions, section headings and the way the recipe is paced. The steps are carefully spaced out so that there won't be any last minute panic, most of the chopping and preparation is done near the beginning, and the curries cook nice and slowly—once you've done the initial work you can leave everything to simmer away and not fuss over it too much.

What is interesting about these descriptions is how they position the meal kit consumer as someone who saves time and can still cook good quality meals efficiently with minimal effort. This can be accomplished through the quickness in cooking the meal itself (“This ragù develops an incredible depth of flavour in just 10 minutes... You'll make a super speedy tomato sauce... before stirring through quick cook spaghetti.”; “Our big red recipe boxes will help you whip up wholesome, impressive meals”) through to traditional appeals to saving time shopping (“...great for busy lifestyle and saves you shopping for ingredients.”; “...you spend less time shopping!”); through the utilising time for the enjoyment of cooking and eating (“We want you to spend less time tracking down hard-to-find ingredients and more time doing what actually makes you feel good: cooking and eating!”) and finally to avoid panic or stress through

following a paced recipe with the cooking taking care of itself (“The steps are carefully spaced out so that there won’t be any last minute panic, most of the chopping and preparation is done near the beginning, and the curries cook nice and slowly...”). In these discursive formulations the consumer is positioned as someone who decision to purchase meal kits is a savvy choice rooted in maximising their time and enjoyment of cooking and meals. The meal kit consumer knows how to maximise convenience and their agency in this process is confirmed through their purchase.

5. DISCUSSION AND CONCLUSION

What is apparent across these interpretative repertoires is the discursive construction of the meal kit consumer’s agency in partnership with the companies concerned. The idea that customers “cook with” these companies transforms the purchase of meal kits as something more than a financial transaction and instead supplants this with the consumer as gaining experiences of cooking and food with others, including family and a wider community of users. The meal kit consumer is therefore drawn into the material practice of cooking through the ways in which their agency is actively constructed through the marketing of these products. Food is thus presented a more than mere sustenance, a point noted Herakova and Cooks, 2017, p. 2) who point out that making food involves social relations and cultural understanding. We also see how it is presented as being creative through working with raw ingredients to transform them into quality chef-like meals. This can also involve more ‘exotic’ culinary offerings drawn from other cultures which can be seen as enhancing the sense of agency and satisfaction of the meal kit user. This transformation of ‘natural’ ingredients into the cooked meal plays to a deep-seated sense of human agency working upon the natural world (Morton, 2007; Khan & Sowards, 2018). It’s not just dinner: Meal delivery kits as food media for food citizens. *Frontiers in Communication*, 3, 39.). The creation of a recipe-based meal plays to this kind of sense of creativity which is further enhanced by the material embodiment of eating food as enjoyment involve the human sensorium. Of course, this is made all the more enjoyable in terms of the meal kit user as someone who can do this by being efficient with the time and effort. The delivery of the ingredients, as we have seen, plays to the idea of the time-poor consumer who exerts their agency by opting for the ‘smart’ choice in subscribing to this service. This is one of the key marketing messages of meal kit companies: they source and deliver the ingredients; the consumer saves time and only has to do the cooking. Finally, we have seen how meal kits are marketed as contributing to environmental sustainability. The agency of the consumer is presented as doing so through the act of choosing to purchase meal kits. This is considered as quite literally a positive represent investment in sustainable living a positive step, albeit indirectly. What is interesting about this kind of rhetorical construction is that it is affirming of the need for sustainable environmental practices around food provision without any kind of active political stance or intervention. It offers enjoyment of food while at one and the same time literally buying into a concern for environmental sustainability. In common parlance is ‘having one’s cake and eat it’. This kind of subtle marketing offers a discursive alternative that elides the gloom and doom of some environmental discourse or the hope and possibility alternatives (Hall, 2014). Instead, it treads a depoliticised line of ‘doing something’ for the environment through the purchase of meal kits.

In conclusion, the marketing of meal kits discursively constructs the agency of the consumer in subtle ways that when taken together are more than the sum of their parts. The consumer’s agency is worked up across the three interpretative repertoires identified in the study, that when combined present meal kits as way of enjoying culinary activity in the home in a way that moves beyond the mundane towards a creative, enjoyable, and sensible way to contribute to environmental sustainability. The celebration of joint company and consumer effort is what makes these products an interesting case study where the agency of the consumer is elevated and weaved into the rhetorical construction of the marketing pitch. This type of marketing may well apply to other products and services and the current study serves as an exemplar of the analytical utility of examining discursive interpretative repertoires and their rhetorical construction.

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An Interdisciplinary Approach to Sustainable Finance through Supporting Green Finance Education

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Abstract

Developing sustainable finance and promoting resource efficiency in the energy sector is essential to achieving the EU's climate goals. To continue this process, training professionals in the energy sector is crucial, as well as creating, supporting and developing long-term cooperation between energy suppliers, companies and universities. So far, education in this area has not included the subject of sustainable finance. The Greening Energy Market and Finance (GrEnFin) project that fills this gap aims to create an innovative and interdisciplinary approach to education, the so-called a sustainable energy expert who will play a key role in promoting best practice for sustainable development while having knowledge of quantitative methods. The aim of the article is to show how the project will be implemented, which will run in two areas: by creating joint Master's studies and a module for professionals.

Keywords: quantitative methods, sustainable finance, structure of a study program

1. INTRODUCTION

The new 2030 EU strategy emphasized the need of low-carbon energy transition and choice of circular economy goals. To achieve assumed purposes, a knowledge of sustainable finance, green energy and quantitative methods as well as topics in energy and climate policy is crucial. The idea that joins academia, business and associates partners is an answer for a growing demand of a new interdisciplinary profession – a sustainable energy expert. The skill that are needed in fast developing green industry rise from regulations coming from EU directives, the EU regulations and international institution as OECD and IRENA that are focusing on net zero economy till 2050. A need of implementation climate and energy targets, construction of new green markets, climate changes and environmental diseases force market to change. EU consultations on a new Energy Market Design force to adapt to a new situation. There is a necessity of low-carbon-transmission, construction of a new energy regulatory framework, that show clear signals to the companies that the market is determined for changes.

2. THE CURRENT STATUS OF CHANGES IN THE ENERGY MARKET

As a result of the recent climate changes, there is a growing demand for knowledge about green energy, increased by the continuous development of new regulations at the regional and global level in the field of energy efficiency (ie ESMA 2020). The development of this sector is supported by the creation of a single European energy market,

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growing awareness of the existing threats to the environment and, consequently, to the stability of the economy and the entire financial system (Bressan and Romagnoli 2021; Monasterlo 2020, ECB 2021).

It turns out that not only financial investments (and in particular portfolio investments - pension funds and investment funds) are sensitive to climate change, but the entire financial system, being the result of interconnectedness of financial entities, may have an impact on systemic financial risk (Battiston et al. 2020). In the face of the current political (e.g. US withdrawal from the Paris Agreement), technological (e.g. rapid decline in the costs of renewable energy production or environmental (Covid-19) shocks, market participants and investors are unable to adequately anticipate changes in asset prices, which leads to systematic mispricing and price volatility (Monasterolo et al. 2017).

The awareness that many standard financial tools cannot already be easily applied to the valuation and hedging of instruments due to the specificity of this commodity, makes the knowledge necessary for the valuation of green and high-carbon energy portfolios highly desirable.

The academic and business partner consortium has therefore adopted the goal of preparing the profile of a new Sustainable Energy Expert, who should combine technical competences in the field of green energy and sustainable finance, quantitative analysis and knowledge in the field of energy and climate policy and business. This scope should also include the ability to analyze the financial portfolio, understanding the energy market issues, from production to distribution, and awareness of supporting the transformation of the energy sector through knowledge of "green financial products".

The knowledge of an energy expert should be interdisciplinary, mainly in order to be able to flexibly adapt to the constant changes taking place on the energy market. These changes mainly concern the deregulation of existing markets and the implementation of new rules for responding to climate change (such as the EU 2020 climate and energy package and the EU 2030 climate and energy targets). It is well known that the energy market must adapt to the new reality through the full integration of all market participants and through demand management and diversified energy service providers. The proposed new market structure should ensure that energy markets support economies in their transition to a low-carbon economy with minimal burden on market participants. This requires the development of a common EU-wide regulatory framework that will provide clear rules for new investments and facilitate the further development of renewable energy sources. This should be done by promoting regional cooperation, coordinating energy policy, the possibility of cooperation in the development of renewable energy sources, including support systems, creating an appropriate management and regulation framework, and ensuring a truly European dimension of security of electricity supply. However, there are two main information gaps that need to be overcome first.

3. A PROPOSAL OF GREEN FINANCE EDUCATION

GrEnFIn partnership plans to educate a Sustainable Energy Expert through a joint study program addressed to university students and a professional module addressed to employees actually operating on the labor market in the energy sector. The business side will play a key role as a link between the university and the market by identifying the energy market needs for sustainable economic development, identifying the expected learning outcomes, key competences and skills of professional people that need to be developed to meet the specific needs of the labor market.

The innovative nature of the GrEnFIn project is due to several elements:

- an innovative, institutionalized and integrated joint study path at European level in the field of energy
- a professional module supplementing the knowledge of experts
- a direct involvement of business partners in the process of creating the educational path
- a pilot class in the form of two summer schools offered jointly to students and professionals
- a creation of a partnership network between the university and business

The creation of a study path in the field of green energy and sustainable finance, including innovative methods of learning and teaching, will consist of an educational program focused on the development of three important skills: quantitative (including math, probability, statistics, and programming), economic and financial, and competences in

renewable energy and green financial products. Diversified in terms of competences, the consortium will provide teaching of the main subjects thanks to cooperation between universities and industry, in line with the sustainable development policy of the European Commission, thus ensuring the best and competitive educational offer for students. The proposed educational program includes a subject consistent with the sustainable development policy and is innovative due to its different and unique features in relation to the existing educational program and projects. Innovation is the main assumption of the program, understood by all as an innovative path of study, which is an international joint educational program in the field of financing green energy.

The creation of a Professional Module will enable the constant improvement of the skills of experts currently working in the energy sector, especially in the field of knowledge about ecological financial products.

The involvement of the business side in the creation and implementation of a joint program will allow for constant verification of the program carried out by market partners. Most of the existing study programs are created mainly by academics, which means that there is no constant exchange of knowledge. This project helps to overcome these shortcomings

The offer of two intensive (pilot) programs is distinguished by innovative methods of conducting courses (new software), innovation in communication, and innovation in reducing the distance to the market.

The creation of a permanent academic and business network made it possible to constantly reduce the distance between the theoretical side (research) and practice (business). The planned platform and regular meetings can contribute to the dissemination of knowledge about green energy, and also constitute a place for joint discussions.

4. CONCLUSION AND RECOMMENDATIONS

By creation of the study programme so much interrelated with business area universities are beneficiaries of the future success. So far, the benefits from the project (for Academic partners) are observed at different levels: at students level, teachers level, and university level (understood as an organisation).

4.1. Students level (educational side of the project)

The biggest beneficiaries of the project are students (as it is typical in Erasmus+ projects) – they gratitude from the possibility to participate in devoted intensive programmes (First Summer School) created in cooperation with business partners. The participation in this summer event allowed students to face up-to dated cases, apply their knowledge with the mentoring leadership. The use of experiential learning tools (a mixture of case study taken from the company with traditional lectures) enabled learning new skills and tools, and created students exposure to new problems and perspectives.

The organised Summer Schools allowed them to apply the acquired knowledge in the green energy sector and green energy finance, to develop students' entrepreneurial skills in the area of green energy finance, thus filling in an existing educational and professional gap.

The sound topic of the project (“Greening Energy Market and Finance”) has a positive effect on students career – results taken from the students evaluation questionnaire after Summer School let assume that the project creates employment opportunities for students – they found the project as an opportunity and chance to build the necessary skills to join energy market in a form of internships, fellowship, or full-time roles.

An additional and always worth to emphasized added value for students was the possibility to experience new form of learning, in international groups, and meet teachers from partners universities. In spite of the Covid-19 pandemic situation the Summer School was an experience which allowed them to make new friends, widen horizons and improve their skills.

4.2. Faculty level (synergy between business partners and university partners)

The GrEnFin project consortium that consists of 14 partners from different countries and businesses takes benefits from the richness of its diversity. The working packages that were already finished enabled university partners to identify major industry challenges, recognized green energy business needs and got the valuable feedback from industry partners. This crucial knowledge and experience would be implemented for building an optimal Training Path for continuing education. Several project meetings facilitated exchange of opinions, thoughts, and experiences, and in our opinion, will benefit at later stage of the project. The project allowed to collect the best competences from

research institutions and the industry in the strategic field of green energy and sustainable finance, support the internationalization and cooperation process necessary toward a market without any barrier.

An added value of the project is an establishing and ongoing building credibility and trust for the academic researcher among practitioners. We (as university faculty) better understand the business partners and business partners better understand us.

4.3. University level (reputational side of the project)

The project aims at creation a common green path that let to apply for Erasmus Mundus funding. At this stage universities were able to create the Pilot Class that is the first step for the creation of common studies. Till now the understanding of local laws and practices was done, as well as the initial preparations considering the accreditation process. All these steps required a good understanding of the needs of universities as institutions. We believe that the successful cooperation of the partners will let us built an attractive curriculum and increase the employability of our alumni. As an added value, the GrEnFin project enables universities to enhance of their reputation through contribution to local/regional economic development.

Building awareness and promoting environmental responsibility is an essential contribution to the service of the community. It is worth to mention an important role of Associated Partners – any new contact facilitate future connections with local and international companies and support the requirements of a global market. New university partners will bring an added value for the consortium – they enable internationalization and modernization process of HE institutions, and facilitate Erasmus Mundus processes.

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Insurance Market in Albania: Life and Non-Life Insurance

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Abstract

The Albanian economy is classified as an economy in transition, this feature is indicative of the growing opportunities it carries. One of the pillars on which the economy is based is business. An environment conducive to its development gives a boost to the economy as a whole. In recent years, the awareness of businesses for securing property and assets in their ownership has increased. Increased awareness is also observed in individuals who after the difficult episodes of recent years have taken measures to secure their lives and property. The insurance sector is a sector with growing potential and even more important for the financial stability of the economy. The world we live in is full of uncertainties and dangers. Individuals, families, businesses, properties and assets are exposed to different types and levels of risks. These include the risk of loss of life, health, property, etc. Although it is not always possible to prevent unwanted events, the financial world has developed products that protect individuals and businesses from such losses by compensating them with financial resources. Insurance is a financial product that reduces or eliminates the cost of loss or the effect of loss caused by different types of risks. Insurance provides financial support and reduces the uncertainties that individuals and businesses face at every step of their life cycle. It provides an ideal mechanism for mitigating risk against events that may cause financial inconvenience to individuals and businesses. The Insurance Sector generates funds through premiums from policyholders. Due to the long-term nature of these funds, these have been invested in the construction of long-term infrastructure assets (such as roads, ports, power plants, dams, etc.) that are important for construction. Employment opportunities have been boosted by large investments leading to capital formation for the economy. The paper will present an overview of the market for the last three years and will list the consequences of two events with high impact on Premiums and Damages that had to be paid for the two earthquakes of 2019 and for life insurance during the Covid pandemic, in the period 2020-2021. The analysis of the paper is based on the hypothesis that by providing a quality service, insurance companies ensure customer loyalty which is associated with increased customer satisfaction. In support of the hypothesis raised: Consumer loyalty in the insurance market is closely related to customer satisfaction of insurance policy holders, through a questionnaire will be analyzed various indicators to measure customer satisfaction. In itself, the insurance sector has a significant impact on the overall economy by mobilizing domestic savings. Insurance turns accumulated capital into productive investments. Insurance also makes it possible to mitigate losses, financial stability and foster trade and commerce activities that result in sustainable economic growth and development. Thus, insurance plays a crucial role in the sustainable growth of an economy.

Keywords: Albania, Damages, Insurance Policies, Insurance Market, Premiums

1. INTRODUCTION

Insurance is a solidarity scheme, which helps individuals in difficulty (Ghosh, 2013). The purpose of insurance is not an opportunity for the individual to benefit, but protection of his life or property from the consequences arising from the event when damage is caused (Ahmed, Ahmed and Usman, 2011). Insurance is a form of risk management,

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risk which is distributed in exchange for small payments to everyone who is insured. Premiums (payments) are generally annual or monthly depending on the type of insurance (Gine, Barboza and Wrede, 2019). For equipping with an insurance policy (eg for car) companies determine the premium based on some historical data such as: age, occupation, license points, accidents committed during the period of use of the vehicle, car model, measures of the engine, the number of passengers and even the color of the vehicle (Ouedraogo, Guerineau and Sawadogo, 2016). The meaning and purpose of insurance is the transfer of risk from the individual to the insurer (insurance company), a risk which is located in our district, by signing the insurance contract. In this way the individual seeks protection from disaster (danger), which can endanger life or cause damage to property (Kozak, 2011). Common features of all risks are that they occur in the future, are unpredictable and do not depend on our desire (Outreville, 2013). The insurance price is the insurance premium. The premium is accumulated by a larger number of individuals (insurance contractors) who are insured against the same risk where the basic assumption is that only a certain number of beneficiaries will actually incur damages that may be tangible or intangible (Chang, Lee and Chang, 2014). In the event of damage, the insurance company will pay compensation or the sum insured to the insured or the beneficiary of the insurance (Kramaric, 2012). Insurance is called compulsory when there is a legal obligation for it, while it is called voluntary when there is no legal obligation for it (Feyen, Lester and Rocha, 2011).

2. LITERATURE REVIEW

Insurance in Albania has started quite late compared to other developed countries and has developed with their characteristics and history. Albanian doctrine talks about the existence of insurance starting from the period before the Second World War, when in the years 1930-1940 foreign insurance companies, mainly Italian, helped to create a good and much needed tradition for the insurance market in Albania (Yildirim, 2015). Initially, their insurance activity was concentrated in the main cities of the country and included products such as: building insurance, industry, accident insurance, life insurance and natural disaster insurance. After World War II, with the establishment of the communist regime the government nationalized industry, banks and all commercial capital in the country. This automatically affected the entire insurance system, thus reflecting the policies of the communist government in its structuring and construction (Tomini, Groot, Pavlova and Tomini, 2015).

From 1948 to 1965 in Albania began to be recognized new forms of insurance such as: compulsory insurance of rented state housing; compulsory passenger insurance; voluntary insurance of property, buildings and real estate; (1949) voluntary life insurance; voluntary insurance of agricultural crops and livestock (1950); voluntary disaster insurance (1954); voluntary insurance of household items (1955); voluntary insurance of property of former agricultural cooperatives, organizations and citizens and livestock (1957); compulsory insurance of imported goods, ships and transshipments (former international transport company) (1961); voluntary insurance of buildings from fire, (1965) etc.

The insurance market is the largest and most advanced market of the non-banking financial sector. Companies operating in the insurance market, together with investment funds and private pension funds, are under the direct supervision of the Financial Supervisory Authority, and not by the Central Bank. The insurance market has marked a long development and positive growth in terms of the wide range of products and services it offers, as well as its geographical spread throughout the country and in several other neighboring countries in the Balkan region where they live other Albanian populations, in Kosovo and Northern Macedonia. This potential is based on favorable economic conditions, advanced regulators, a supervisory system, a low degree of market impact as well as by the business community and population, which are dynamic and easily accessible (Thorburn, 2008).

Despite the extremely positive developments of the last twenty years in strengthening the foundations and sustainability of the insurance industry in the country, as well as referring to the demographic and economic indicators from INSTAT it is noted that the potential for further development, growth and expansion of the industry is large and that new areas can be 'trampled' in this regard. Albania continues to be one of the countries with the youngest average age in Europe, at 35.4 years old. On the other hand, there is an increasing trend in the number of elderly people in general and the life expectancy of the population in particular: 80.5 years for women and 77.4 years for men. Although Albania still remains a young population compared to the general trends of EU countries, in recent years there has been a decrease in the number of young people and an increase in the number of older people as a result of emigration, reduced fertility and increased longevity (Ward and Zurbruegg, 2000) Moreover, based on the global economic statements of the FMF for 2018, Albania together with Kosovo are ranked last in Europe for per capita income per year, with 5,261 dollars for Albania and 4,324 dollars for Kosovo. Whereas, insurance impact in GDP is only 0.6%, while in Central and Eastern Europe it is 2.5%, while in the EU it goes to 7.6%. Despite these trends, the insurance industry has undergone dramatic changes in recent years, providing assistance and support to the business community

and other entities in economic and financial support, reducing risks and losses as a result of natural disasters and other uncertainties (Adams M. et al., 2009).

3. RESULTS OF THE ANALYSES

The study considered using a simple regression analysis serves to analyze the relationship between overall customer satisfaction (defined as an independent variable) and how it affects customer loyalty (which is defined as the dependent variable). The findings show that overall customer satisfaction was significantly ($p < 0.03$) and positively (0.697) correlated (i.e., influenced) by customer loyalty. For the significance correlation, it was clear that (Sig. 0.037) is lower than ($P < 0.05$) the level of statistical significance. Moreover, the (direction) positive and the size of the parameter coefficient, the beta value (0.697) indicates that the relationship between customer satisfaction was positive and the relationship was strong. So, it is clear that overall customer satisfaction significantly and positively affects customer loyalty. Therefore, it shows that a small increase in customer satisfaction increases customer loyalty to the brand dramatically.

Table 1: Regression analysis

Model	Unstandartized Coefficients		Standartized Coefficients	t	Sig.	95% Confidence Interval B	
	B	Std. Error	Beta			Lower bound	Upper bound
	Customer Satisfaction	0.851	0.33			0.697	2.57

A. Dependent variable

Source: Author Calculations

From the results obtained from this study, gender is a factor influencing participation in insurance where 62.5% of respondents were male and about 85.8% of them were part of an insurance scheme. As the insurance market in Albania is oriented towards compulsory motor insurance, it means that the persons who will be in direct contact with insurance products are men. Meanwhile, 37.5% of female respondents had a participation in the insurance scheme at the level of 70.2%.

From the data obtained it results that 50% of respondents were with income of 50,000-90,000 ALL per month. This means that with the increase of income also increases the participation of persons in the insurance market. Both variables stand in the right ratio. Regarding the age variable, it results from the survey that about 55% of them that participated in the insurance market were in the age group 18-35 years, the active working age. Also the level of education is another demographic variable which affects the behavior of clients to be assured. The persons who were insured in the insurance market belonged to secondary education which shows the importance of the level of education in insurance. Increasing this level leads to an increase in the number of insured. From the data obtained it results that those who were insured about 56.3% of them participated in non-life insurance and 18.8% in that of life. And the rest are both together (25%). Of these persons, about 78.5% are insured due to legal obligation and the rest voluntarily. From the survey there were those who were not part of the insurance market. The main reason with 51.4% is distrust to be compensated in time. Followed by 18.6% in those cases when they did not really have compensation. Persons who were already part of the insurance market were interviewed about the period of stay as a client in the insurance market it turned out that 20% of them had a residence period of more than 5 years, 13.3% of them had 3-5 years and the rest less than 3 years (60.7%). So, this means that there is an increase in customer loyalty to the insurance market. The purpose of this survey was what customers valued most in the company they belonged to, ie the main reason why they are part of it. About 31.3% were more interested in prompt service and keeping promises. 25% of them paid more attention to the company's reputation and image in the market. And in the end with a percentage equal to 12% what interested the customers the most were the low prices and the variety of products. Price is not a major factor in customer behavior because market prices are more or less the same in the non-life insurance market.

The marketing part of the company also paid special attention to this study. When asked about obtaining information about the existence of their insurance company, 56% of them had received the news from third parties and the rest from online marketing and television advertising. Regarding the latter, 31.3% of individuals said that they

did not remember the advertisement of any insurance company and 25% of them remembered only the company where they belonged. So, marketing company still has room for improvement.

The focus was also on the company's performance in providing quality customer service. For this, the behavior of employees and the complaints that customers have had regarding the service provided were analyzed. About 18.8% of them have had rude situations in contact with company employees and about 12.5% of respondents in total had not received a solution in terms of complaints they had about the service. The reaction of these people dissatisfied with this behavior results that, 25% have left the insurance market. While the rest has simply changed the insurance company. When a product is not sold in the right amount, the sales policy pursued by the company also affects. Thus insurance companies must be correct by compensating quickly and with quality as in this way mutual trust is created between the two parties. To measure a customer's satisfaction and the future of the insurance market from the questionnaire, it is concluded that 75% of them would recommend to the rest to become part of this market. So, it can be said that the future of the insurance market tends to be positive.

The end result of the reliability of the SERVQUAL analysis is assessed as focused on the importance of the dimension followed by response, security empathy and finally vulnerability as an important dimension of service quality is less critical. In terms of overall customer satisfaction, customers are found satisfied with the existing service provided. Therefore, managerial efforts and resource allocations should be focused on improving insurance reliability, followed by response, security, empathy and finally towards vulnerability within these SERVQUAL dimensions, there should be more management efforts and strategies directed towards improving important dimensions for which customers are less satisfied such as reliability and responsiveness. The overall level of customer loyalty is high, which indicates their moderate level of conformity towards their attitude commitment. From companies it should be understood that having satisfied customers is not good enough; they need to have extremely satisfied customers. A finding also shows that overall customer satisfaction is evident and positively correlated with customer loyalty. This finding has a good implication for insurance companies. Moreover, a small increase in customer satisfaction increased customer loyalty dramatically. Additionally by taking advantage of the extremely satisfied investment of repeat customers, insurance managers and stakeholders can save on their marketing expenses due to the marketing power of highly satisfied customers.

4. CONCLUSIONS

In the complex and dynamic insurance market of 2021, it is no wonder that the risks have been and are greater, but also the greater growth opportunities are closely intertwined. Although 2021 has been and continues to be a challenging year, the announcement of the Covid-19 vaccine and a potential return to normalcy in 2022 has boosted the market, but there will still be challenges as the economy recovers from the deepest recession in modern history. A global survey conducted by the Deloitte Financial Services Center found that many insured people know their jobs are at risk, even after spending most of 2020 adjusting for returns. The epidemic and other catastrophic losses hit many insurers hard in the first half of 2020, especially those events that led to unemployment or even lack of compensation for workers.

Based on the impact of the pandemic on employment, business activity and trade, global non-life premiums are expected to be constant for the full year 2021, including a 1% decline in advanced markets. However, despite the challenges, the industry could return to 3% growth in 2022, led by a potential 7% growth in developing regions. Life insurance premiums could fall 6% globally by the end of 2021 and by 8% in advanced economies, while a 3% growth recovery is fully projected for 2022. Emerging markets are once again likely to lead the way as advanced markets continue to struggle. The situation in the non-bank financial markets is monitored by the Financial Supervision Authority, under the supervision of the Authority it presented with insignificant fluctuations and resisted the effects of the pandemic. The supervised entities continued their activity regularly. The Authority during 2020 has been in constant monitoring of developments in the markets under supervision and has regularly assessed the impact of the pandemic on these markets, which faced new challenges. Regarding the activities in the field of insurance and reinsurance market, the Authority has continued to monitor and analyze the insurance market, assessing the financial position of companies operating in this market, both individually and as a whole for the whole market. The financial situation of insurance companies was presented with an adequate level of liquidity, maintaining financial indicators at the market level.

For Life insurance companies, the coverage of mathematical provisions has increased to 129.61%, from 120.8% that was on 31.12.2019. The increase in these indicators is also influenced by the capitalization of the profit of 2019, in implementation of the Board Decision no. 56, dated 10.04.2020 on the suspension of dividend distribution, proving the effectiveness of the measures taken by the Authority. These measures affected the maintenance of the level of liquidity in the system and financial indicators, that of capital adequacy and assets to cover technical provisions. The

average premium paid by insurers for the main categories of motor vehicles has decreased by approximately 3.8% during 2021, compared to 2020, mainly due to the entry into force of restrictive measures for the circulation of motor vehicles. The voluntary pension fund market has experienced an upward trend, expressed in the increase in the net asset value and the number of members. During 2020, in the market of private voluntary pensions exercised their activity, four voluntary pension funds administered by four management companies, three of which perform the activity of administration for both investment funds and voluntary pension funds. Pension market investments in 2020 amounted to ALL 3.46 billion, marking an increase of 24.92%. During the analysis it is noticed that the advantages of the insurance market are: the existence of a market capacity not yet used, setting new tariffs at a lower level than before, increasing the specific weight of voluntary insurance. At the same time the challenges of the market are: lack of information, lack of culture to insure, high level of compulsory insurance compared to voluntary ones, strong competition, low level of income, problems with reparations, the global economic crisis has shrinking insurance market, unforeseen situations like earthquakes and pandemics require more contingency planning.

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Prioritization of Performance Evaluation Factors in Retail Sector

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Abstract

Performance management can be defined as achieving better organizational results by understanding and managing performance within an agreed framework of planned objectives, standards and requirements. This process exists to establish a common understanding of what needs to be done for the management and development in the short and long terms. In this study, performance evaluation factors of a technology company that performs in the retail sector are prioritized employing best-worst method and the results are analyzed.

Keywords: Best-worst method, decision support systems, multi-criteria decision making, performance evaluation

1. INTRODUCTION

Performance management consists of aligning individual objectives with organizational objectives. It is simply a matter of obtaining better organizational results by understanding and managing performance within an agreed framework of planned objectives, standards and requirements. The main elements of performance management are agreement, measurement, feedback, positive reinforcement and dialogue. Possible results of effective performance management can be stated as clarifying professional responsibilities and expectations, improving individual and collective productivity, developing employee capacities to their fullest extent through effective feedback and coaching, behavior management for align with the organization's core values, goals and strategy, provide a foundation for operational decisions on human capital, and improve communication between employees and managers.

In the literature, it is seen that many studies on performance evaluation have been carried out. In recent years, personnel evaluation ([1],[2]), project performance evaluation ([3], [4]), evaluation of logistics service providers ([5], [6]) supplier performance evaluation ([7], [8], [9]) are at the forefront. Data envelopment analysis ([10], [11], [12]) and decision making models were frequently used in performance studies ([13], [14], [15]).

In this study, prioritization of performance evaluation factors in the retail sector is conducted. Best-worst method (BWM), which is based on choosing the most important and least important criteria among the criteria, is employed

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for the evaluation. The rest of the study is organized as follows. In Section 2, best-worst method is briefly explained. The case study is illustrated in Section 3. Finally, conclusions are given in the last section.

2. BEST-WORST METHOD

BWM was proposed by Rezaei [16] to reduce the number of pairwise comparisons in the AHP. In BWM, the decision makers specify the most and the least preferred criteria and they conduct pairwise comparisons among the best/worst criterion and the remaining criteria [17]. To compute the criteria weights, a mathematical model is constructed and consistency ratio is calculated to control the reliability of the method. BWM requires fewer comparisons and it provides more consistent weights compared to other matrix-based MCDM methods [16]. The steps of the BWM can be summarized as follows [16]:

Step 1. Determine a set of evaluation criteria (C_1, C_2, \dots, C_n)

Step 2. Determine the best (e.g. most desirable, most important) and the worst (e.g. least desirable, least important) criteria

Step 3. Determine the preference of the best criterion over all the other criteria using 1-9 scale. The resulting Best-to-others vector would be $A_B=(a_{B1}, a_{B2}, \dots, a_{Bn})^T$ where a_{Bj} indicates the preference of the best criterion B over criterion j . It is clear that $a_{BB}=1$.

Step 4. Determine the preference of all the criteria over the worst criterion using 1-9 scale. The resulting Others-to-worst vector would be $A_W=(a_{W1}, a_{W2}, \dots, a_{Wn})^T$ where a_{jW} indicates the preference of the criterion j over the worst criterion. It is clear that $a_{wW}=1$.

Step 5. Compute the optimal weights $w_1^*, w_2^*, \dots, w_n^*$ employing Eq. (1).

$$\begin{aligned} & \min \varepsilon \\ & \text{s.t.} \end{aligned} \tag{1}$$

$$\begin{aligned} & \left| \frac{w_B}{w_j} - a_{B,j} \right| \leq \varepsilon, \forall j \\ & \left| \frac{w_j}{w_W} - a_{j,W} \right| \leq \varepsilon, \forall j \\ & \sum_{j=1}^n w_j = 1 \end{aligned}$$

$$w_j \geq 0, \text{ for all } j$$

The reliability of the comparisons in BWM are determined using consistency ratio (CR). CR is computed via Eq. (2) [18]

$$CR = \frac{\varepsilon^*}{CI} \tag{2}$$

Consistency index are given in Table 1.

Table 1. Consistency index

a_{BW}	1	2	3	4	5	6	7	8	9
Consistency index	0	0.44	1	1.63	2.30	3	3.73	4.47	5.23

3. CASE STUDY

In this study, prioritization of the performance evaluation factors in the retail sector is conducted. Employee numbers (C_1), sales amounts (C_2), customer evaluation scores (C_3), turnovers (C_4), and working hours (C_5) are determined as the evaluation factors by reviewing the literature. The best criteria and the worst criteria are identified as sales amounts and working hours, respectively by the decision makers. Best-to-others vector is constructed as in Table 2.

Table 2. Best-to-others vector

	C_1	C_2	C_3	C_4	C_5
C_2	7	1	3	5	9

Others-to-worst vector is constructed as in Table 3.

Table 3. Others-to-worst vector

	C_5
C_1	2
C_2	8
C_3	7
C_4	3
C_5	1

By solving Eq. (1), the optimal weights are obtained as in Table 4.

Table 4. Optimal weights

	Weights
C_1	0.092
C_2	0.516
C_3	0.214
C_4	0.129
C_5	0.049

4. CONCLUSIONS

In a globalizing world where competition and change are fast, customer needs are changing every day. The ability of companies to sustain their existence in this complex structure depends on their understanding of environmental changes and their adaptation to these changes. On the other hand, the level of knowledge and skills of employees is increasing and employees are expected not only to do their jobs but also to think and make decisions. Performance management system is considered as the most important management systems in order to achieve the goals of the companies. In this study, Prioritization of the performance evaluation factors in the retail sector is conducted. BWM, which is proposed to reduce the number of pairwise comparisons in the AHP, is employed. According to the results, the weight of the most important factor, sales amounts, is computed as 0.516, and the weight of the least important factor, working hours is calculated as 0.049, and the consistency of the results is assured.

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Does The Accounting Practices Effect The Financial Performance in Companies? An Empiric Analyses

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Abstract

The economic system of each country will be able to function normally and without many problems if the management of each economic entity receives a complete accurate and fast information. Among the many pieces of information used by the management of each entity, accounting plays a special role. Accounting, continuously and without interruption, provides the management of the entity and beyond with fast, accurate, rigorously documented and written information. It provides the management of the entity with complete information about the entity's financial condition, its success and the factors that have affected the achievement of the activity or its failures. This study consists on the analysis of the implementation of accounting practices in Albania, the role they have, the effect they give on financial performance. The importance they have in manufacturing firms in Albania has been analyzed. Variables that affect financial performance are grouped, one of the main factors is the implementation of practices and managing the implementation of these accounting practices. Awareness of manufacturing firms in Albania for the positive results brought by the implementation of accounting practices is considered a great achievement for manufacturing firms, and the economy as a whole. During the study several hypotheses were raised:

1. Positive correlation of the implementation of accounting practices with the financial performance of manufacturing firms.
2. Positive connection of the implementation of accounting practice with the adaptation of accounting standards.
3. Negative link to the implementation of accounting practices with additional costs.
4. Positive correlation of profitability with the implementation of accounting practices.

These hypotheses were made based on the conditions in which Albania is located, according to the classification Albania is part of developing countries. The implementation of accounting practices is closely related to cost analysis, adaptation of accounting standards, profitability analysis and the results they have on financial performance. These analyzes were performed based on the correlation between these variables.

Keywords: word1, word2, word3, word4, word5

1. INTRODUCTION

Awareness of manufacturing firms in Albania for the positive results brought by the implementation of accounting practices would be considered a great achievement for manufacturing firms, and the economy as a whole (Kaplan, 1984). The main role for the implementation of successful and lower cost practices is played by the accounting department (Kariyawasam, 2018). It does not generate revenue directly, but provides a range of specific services intended for the rest of society, and should do so at the lowest possible cost (Naser, 1993). As a result, accounting staff are required to deal with the transaction process, write reports, create new processes or analyze existing ones, while at the same time focusing on reducing total business costs (Mandela, 2014). This cost-based environment is very difficult for most accountants because their training is mainly based on accounting rules and standards and success lies in training a highly specialized department in a cost-effective manner (Cadez, 2006). They improve their ideas by attending seminars or reading relevant accounting books, but there is no centralized source of

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information for them to consult, thus creating the possibility of possible improvements in their implementation in practice in the right way (Chenhall and Langfield-Smith, 1998).

2. LITERATURE REVIEW

Anand, Sahay and Saha (2005) argue that change comes quickly in the present time and this brings the need to properly create and implement accounting practices, adds value to different practices. The literature has also shown that some practices such as using the regression method, a method which influences decision making has not been greatly favored by most businesses (Simmonds, 1981).

Cravens and Guilding (2001) have defined accounting practices as a variety of methods that are considered specifically for manufacturing businesses as key supports in infrastructure and its core processes. Accounting practices should not only focus on their implementation but also on how they are implemented (Sibanda and Manda, 2016). Managing accounting practices includes budgeting, performance appraisal, decision-making information, strategic analysis, and many other elements (Nixon, 1997).

Cooper and Kaplan (1988) pointed out that there is a limitation to these cost systems, as they do not provide an accurate method of recording expenses in order to make the most accurate decisions possible.

Karunananda and Jayamaha (2011) noted that the perceived importance of cost accounting is driven by declining profitability, rising costs, competition, and the economic crisis. It is noted that companies still use traditional accounting practices while important new accounting practices such as strategic planning are perceived as less important than traditional ones (Siyabola, 2013).

Gibson (2013) argue that accounting practices have not changed in recent years. But this applies to developing countries because in developed countries there have been changes in the implementation of accounting practices as an example we can mention the United Kingdom (Popa and Ciobanu, 2014). The management of these practices also plays an important role in order to have positive results (Okafor, 2012). This element is not very developed and fully explored in Albania, therefore it plays a key role today. No studies and research have been conducted on this element in Albania, so it can be concluded that the effects of accounting practices on financial performance and their management in Albania are not as well documented as in other developing countries, as noted Ahmad (2017).

3. RESULTS OF THE ANALYSES

In this study, 35 manufacturing firms in Albania are considered and these firms are from different production sectors in order to have a generalization of the study results.

We present some main hypotheses in the paper such as:

1. Positive connection of the implementation of accounting practices with the financial performance of manufacturing firms.
2. Positive connection of the implementation of accounting practice with the adaptation of accounting standards.
3. Negative link to the implementation of accounting practices with additional costs.
4. Positive correlation of profitability with the implementation of accounting practices.

The implementation of accounting practices is closely related to cost analysis, adaptation of accounting standards, profitability analysis and the results they have on financial performance. These analyzes were performed based on the correlation between these variables.

The regression method was used to process the data, through which the dependence variable (financial performance) based on independent variables such as profitability assessment, cost analysis, budgeting, strategic analysis and accounting practices. The correlation method was also used to look at the relationship between the independent variables. Let's build the model with these variables and test its significance.

Dependent Variable: Financial Performance
Method: Least Squares
Date: 10/13/21 Time: 17:01
Sample (adjusted): 1/01/0001 8/27/0001
Included observations: 35 after adjustments

Table 1. Regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.760154	0.360042	2.111292	0.0435
PA	-0.055881	0.084688	-0.659853	0.5146
CA	0.065849	0.082678	0.796450	0.4322
B	-0.060502	0.047769	-1.266543	0.2154
SA	-0.673737	0.086689	-7.771866	0.0000
APAS	0.232066	0.183044	1.267819	0.2149
S.E. of regression	0.161160	Akaike info criterion	-0.658032	
Sum squared resid	0.753205	Schëarz criterion	-0.391400	
Log likelihood	17.51555	Hannan-Quinn criter.	-0.565991	

Source: Author Calculations

According to the table, it is noticed that $F_v = 60.5 > F_k$, so H_0 falls down and the model is statistically significant. Note that $R^2 = 89.7\%$, which means that 89.7% of the variation of financial performance of manufacturing companies is explained by the variation of the variables taken in the study, while 10.3% is explained by other factors not included in the model. In addition to the importance of the model, through this test, the simple regression equation for performance (P) is also generated. It is of the lin-lin form:

$$FP = 0.760 - 0.056xPA + 0.066xCA - 0.061xB - 0.674xSA + 0.232xAPAS$$

Then it can be said that:

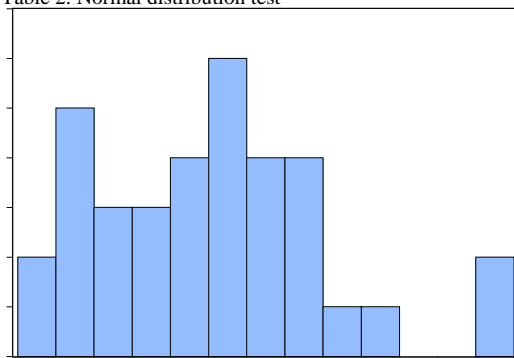
- The profitability assessment (PA) as it is not used much currently has led to a deterioration of financial performance by 0.056 units.
- The use of cost analysis (CA) shows that if used even more it will improve financial performance by about 0.066 units.
- If the budgeting (B) of the respective elements were applied, according to the analysis it results that the financial performance will decrease by 0.061 units if this practice increases by 1 unit.
- If these manufacturing businesses were to use strategic analysis (SA), increasing this practice by one unit would reduce performance by 0.674 units. This is because firms are mostly focused on the short term and rarely on the long term.
- Increasing the implementation of accounting practices and adapting standards (APAS) by 1 unit will improve financial performance by 0.232 units.

The normal dispersion test helps to assess whether the residues have a normal dispersion or not. Hypotheses are raised:

$H_0: u_i = N(0, \sigma^2)$ (Equations have normal distributions)

$H_a: u_i \neq N(0, \sigma^2)$ (Equation has no normal distribution)

Table 2. Normal distribution test



Series: Residuals	
Sample 1/01/0001 8/27/0001	
Observations 35	
Mean	Median
Maximum	Minimum
Minimum	Std.
Dev.	Skewness
Kurtosis	
Jarque-Bera	Probability

Source: Author Calculations

Based on the above information, in the table on the right, we see that $S = 0.68$ (coefficient of asymmetry) and $K = 3.276$ (coefficient of excess) which are close to the perage values $S = 0$ and $K = 3$, so H_0 stands and this will says that the equation has normal distribution. Regarding the correlation analysis:

1. Positive reationship of the implementation of accounting practices with the financial performance of manufacturing firms.
2. Positive relationship of the implementation of accounting practice with strategic analysis.
3. Negative relationship to the implementation of accounting practices with additional costs.
4. Positive relationship of profitability assessment with the implementation of accounting practices.

Table 3. Correlation analysis

		Coefficients	
		FP	APAS
FP	Pearson Correlation	1	.715**
	Sig. (2-tailed)		.000
	N	35	35
APAS	Pearson Correlation	.715**	1
	Sig. (2-tailed)	.000	
	N	35	35

** . Correlation is significant at the 0.05 level (2-tailed).

Source: Author Calculations

The first coefficient shows us the strength of the relationship between the variables taken in the study. In our case, the correlation coefficient between ‘Financial Performance’ and ‘Accounting Practices’, results 0.715, which is interpreted as a significant positive coefficient for the correlation between the variables. For the coefficient to be considered significant for a strong positive correlation, it must be > 0.6 , and in this case $0.715 > 0.6$.

The coefficient of significance (α) should also be considered. The coefficient taken as the basis for the analysis is 0.05, and in this way to have a statistically significant relationship, the coefficient resulting from the analysis of the variables must be less than 0.05. In this case it is 0, which means that this result (correlation) is statistically true, so the results are not random. It can be said with certainty that there is a ‘strong positive link between the implementation of accounting practices and the financial performance of manufacturing firms’.

Table 4. Correlation analysis

		Coefficients	
		APAS	SA
APAS	Pearson Correlation	1	.708**
	Sig. (2-tailed)		.000
	N	35	35
SA	Pearson Correlation	.708**	1
	Sig. (2-tailed)	.000	
	N	35	35

** . Correlation is significant at the 0.05 level (2-tailed).

Source: Author Calculations

In this case, the correlation coefficient between ‘Strategic Analysis’ and ‘Accounting Practices’, results 0.708, which is interpreted as a significant positive coefficient for the correlation between the variables. For the coefficient to be considered significant for a strong positive correlation, it must be > 0.6 , and in this case it is $0.708 > 0.6$. The significance coefficient (α) should also be considered. The coefficient taken as the basis for the analysis is 0.05, and in order to have a statistically significant relationship, the coefficient derived from the analysis of the variables must

be less than 0.05. In this case it is 0, which means that this result (correlation) is statistically true, so the results are not random. It can be said with certainty that there is a 'strong positive link between the implementation of accounting practices with the performance of strategic analysis of manufacturing firms'.

Table 5. Correlation analysis

		Coefficients	
		APAS	CA
APAS	Pearson Correlation	1	.601**
	Sig. (2-tailed)		.000
	N	35	35
CA	Pearson Correlation	.601**	1
	Sig. (2-tailed)	.000	
	N	35	35

Correlation is significant at the 0.05 level (2-tailed).

Source: Author Calculations

The first coefficient shows us the strength of the relationship between the variables taken in the study. In our case, the correlation coefficient between 'Financial Performance' and 'Cost Analysis', results 0.601, which is interpreted as a positive coefficient for the correlation between the variables. For the coefficient to be considered significant for a strong positive correlation, it must be > 0.6, and in this case 0.601 > 0.6. The coefficient of significance (α) should also be considered. The coefficient taken as the basis for the analysis is 0.05, and in order to have a statistically significant relationship, the coefficient derived from the analysis of the variables must be less than 0.05. In this case it is 0, which means that this result (correlation) is statistically true, so the results are not random. It can be said with certainty that there is a 'strong positive link between the implementation of accounting practices and cost analysis'.

Table 6. Correlation analysis

		Coefficients	
		APAS	FP
APAS	Pearson Correlation	1	.345 [†]
	Sig. (2-tailed)		.042
	N	35	35
FP	Pearson Correlation	.345 [†]	1
	Sig. (2-tailed)	.042	
	N	35	35

Correlation is significant at the 0.05 level (2-tailed).

Source: Author Calculations

The first coefficient shows us the strength of the relationship between the variables taken in the study. In our case, the correlation coefficient between 'Financial Profitability' and 'Accounting Practices', is 0.345, which is interpreted as a negative correlation coefficient for the variables. For the coefficient to be considered significant for a negative correlation, it must be < 0.6, and in this case it is 0.345 < 0.6. The coefficient of significance (α) should also be considered. The coefficient taken as the basis for the analysis is 0.05, and in order to have a statistically significant relationship, the coefficient derived from the analysis of the variables must be less than 0.05. In this case it is 0.042, which means that this result (correlation) is statistically true, so the results are not random. We can safely say that there is a 'weak negative relationship between the implementation of accounting practices and financial profitability'.

4. CONCLUSIONS

What specifically happened to manufacturing businesses in Albania? The study finds that the most important elements of implementing practices are the focus on reducing costs and increasing profit. This applies to every firm, but the manufacturing firms surveyed in Albania are focused on the short term and try to reduce any costs that do not bring immediate benefit. This is also seen in the regression analysis where the profitability analyzes themselves were almost never practiced, or the evaluation given to them was very low. Reduced cost practices were applied, such as their division into fixed, variable and additional costs. The regression method to have a forecast in the future was not used in any manufacturing business, the ABC method was known only theoretically. Many other factors influenced the implementation of these accounting practices starting from our level of compliance with the basic rules in accounting, accounting standards. Adapting and understanding them as best as possible leads to more accurate implementation of practices and understanding of their value.

Perhaps our culture hinders their proper development and implementation. Lack of proper information and focus only in the short term does not allow the development of these manufacturing firms. From a practical point of view, this study recommends creating and raising awareness of the value of accounting practices and how they are implemented, as this does not allow businesses to understand what they are missing out on by not implementing them. The results recommend that to achieve the right level of financial performance, firms should not only focus on the short run and profit as a quantitative result but rely on other indicators that have gained importance recently. Accounting practices need to be constantly evolving and changing to change the role of accountants. Vocational education plays an essential role, it should equip their students with skills in coping with the rapidly changing business environment so that they can always provide the right information.

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