

THE
CYPRUS
JOURNAL OF
SCIENCES

PUBLISHED BY AMERICAN COLLEGE

VOL. 9 2011

The Cyprus Journal of Sciences

The Journal of American College

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DANCE IN PRIMARY EDUCATION: A COMPARISON BETWEEN GREECE AND ENGLAND

GLYKERIA P. REPPA*

ABSTRACT

In this study there is an attempt to present the similarities and the differences between Greek and British curriculum for dance. Moreover a second question is whether dance lessons in Greek schools can provide all the advantages that this activity offers to children. For this purpose there is bibliography reference, followed by an analysis and comparison of the two curricula. Moreover, the advantages of dance lessons are presented, and an examination whether the Greek curriculum for dance can provide all these advantages is presented. Finally, there are some suggestions as for what should be done as a conclusion to this analysis.

Keywords: Dance Education; Greek Curriculum for Dance; British Curriculum for Dance; Comparison.

1. INTRODUCTION

The Ancient Greeks had realized the value and the opportunities that dance has as a mean of education, that is why dance had a primary role in their education. They believed that the person who did not know how to dance was uneducated and the person who knew how to dance was educated and cultured. Plato in “Nomous” and “Politeia” mentions the advantages of dance and he believes that every young woman and man should be educated through similar exercises and music. He also believes that dance is an instinct, the wish of the person to be exteriorized and his/her speech to be expounded by body (Zikos and Panagiotopoulou, 1990). Dancing is part of the history of human movement, part of the history of human culture and human communication (Brinson, 1991).

In recent years dancing is part of the national curriculum in both Britain and Greece. But it is not as a subject on its own right, but as a part of physical education in both countries. In this study there is an attempt to present the similarities and the differences between Greek and British curriculum for dance. Moreover, a second question is whether dance lessons in Greek schools can provide all the advantages that this activity offers to children.

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2. METHODOLOGY

For this purpose there is bibliography analysis. First of all, there is a reference to the special characteristics that dance has. Then the Greek and the English curriculum for dance are presented. This is followed by an analysis and comparison of the two curricula and if the Greek curriculum for dance can provide all the advantages that dance can offer. Finally, there are some suggestions as for what should be done, as a conclusion to this analysis.

3. SPECIAL CHARACTERISTICS OF DANCING

It is clear that with dance, pupils learn about their body and how it can move. The Kinesthetic ability and intelligence can be developed, though, through dance. Pupils can find different and many ways that the body can do and develop them. There are unlimited ways in which the body can move. Dance is a subject that can promote the enrichment of movements, movement creativity and kinesthetic ability.

Rhythmic development can occur through dancing. According to Dalcroze the source of the musical rhythms is in the rhythms of the vital actions of the human body (Bourneli, Koutsouki, Zografou, Maridaki, Xatzopoulos, Agalianou, 2006). He also pointed out that the human listens the rhythm with all his/ her body, and he/ she realizes it by gaining a rhythm muscle sensitivity (Bourneli et.al., 2006). It is obvious that pupils who learn dance and do similar lessons have the advantage of developing their personal rhythmic and of course the understanding and the distinction of the different rhythms.

Dance uses body language to communicate, it is a non-verbal communication. Communication is vital to all beings. Every being finds ways to communicate with its own kind. The development of the human mind helped humans to discover a new way to communicate, which is speech. This discovery has disadvantage, other ways of communication to decline. Brinson (1991) says that: *“each is basic to human rationality by which we communicate to others our ideas and feelings about the world. Not all of these communications require words. There are whole areas of feelings, senses and emotion actually which cannot be expressed in words. Dance is a powerful example of this kind of non-verbal communication”*.

This special characteristic of dancing is very important to the development of the multi-cultural sense. The child that is not a good speaker of the spoken language of the country will not feel backseated in dance lessons because there is no need of words to communicate. The only things that are needed are observation and movement. As Zervas (1993) said these two characteristics are in the nature of the child. Therefore, there is an indirect positive development of children’s self-esteem, self-confidence, and trust of their selves, since they realize that there are other ways, for communication beside speech.

Another special characteristic of dancing is the socialization and the culture of cooperation, friendship and moral, that is developed. In a dance lesson pupils have to cooperate, communicate, respect and trust each other. So the development of the above values is being done indirectly, unforced and easily, by attending a dance class.

Dancing as an art form, offers direct ways of exploring values, of raising questions of personal, moral and aesthetic value and discussing the ideas and perceptions to which they relate. The aesthetic development, which is provided by dancing (and the other forms of art), helps deepening the sensitivities of young people to the formal qualities of the arts and extending the range of their aesthetic experience and values. Moreover, the experience of success in achievement, and of enjoyment in learning and working with others raises immeasurably the self-esteem and social confidence of young people (Brinson, 1991).

Another important issue that is provided especially by dancing, is cultural education. According to Brinson (1991) “*cultural education helps people to recognize and analyze their own cultural values and assumptions; brings them into contact with the attitudes, values and institutions of other cultures; enables them to relate contemporary values to the historical forces which molded them; and alerts them to the evolutionary nature of the culture and the potential for change*”. The important roles that dance has for the development of multicultural sensitivity, if it is taught properly, are obvious here too.

How appropriate to offering all the above values and characteristics, though, are the dance lessons that are being provided by national education in Greece and England? Further down there is a reference to the national curricula for dancing of both countries.

4. THE GREEK NATIONAL CURRICULUM FOR DANCING

Dancing in the Greek national curriculum is being taught in the frame of physical education (PE). The only kind of dance that is being taught in Greek schools is the Greek traditional dancing. There is no other kind of dance that is scheduled by the national curriculum. Here is a reference to the aims of this lesson and how many hours are scheduled, in primary school, according to the national curriculum.

According to the national curriculum (2006) the aims of the subject of dancing in primary school are:

1. The connection of physical education with the Greek traditional dancing and civilization.
2. The understanding of the richness of the Greek traditional dancing.
3. The realization that dancing is a symbolic mean of expression and communication.
4. The development of the cognitive, emotional and psychokinetic sections of pupils through dance.

5. The understanding of rhythm.
6. The development of creativity and the participation in performances that are related to Greek tradition.
7. The understanding that dancing is a way of living.

The hours in every class that is scheduled by the curriculum are:

TABLE 1: HOURS OF DANCING IN PRIMARY SCHOOL

Grades	Hours of dance	Hours of PE
1 st and 2 nd	12	62
3 rd and 4 th	15	62
5 th and 6 th	12	64

As it is obvious the hours of dancing that are scheduled per grade are: 12 hours from 62 hours of PE for first and second class of primary school; 15 hours from 62 hours of PE for third and fourth class of primary school; and 12 hours from 64 hours of PE for fifth and sixth class of primary school. It is pointed again, that in all these hours pupils are taught only Greek traditional dances (Zounxia, 1998).

5. THE ENGLISH NATIONAL CURRICULUM FOR DANCING

In England dancing is also being taught under the frame of physical education. The difference from Greece is that in dance lessons are not taught only English traditional dances.

According to the English national curriculum for key stages 1 and 2 the subjects that are taught in every year are:

Year 1:

In this unit children explore basic body actions, eg jumping and turning, and use different parts of their body to make movements. They create and repeat short dances inspired by themes such as clowns, penguins and folk dance.

Year 2:

In this unit children focus on creating and performing short dances that communicate different moods, feelings and ideas. Their work is inspired by a range of subjects, including some based on different times and cultures.

Year 3:

In this unit children perform dances, focusing on creating, adapting and linking a range of dance actions. These are inspired by a variety of subjects, including some traditional, social and/or historical dances. They work with a partner and in small groups.

Year 4:

In this unit children focus on creating characters and narrative through movement and gesture. They gain inspiration from a range of subjects, and work in pairs and small groups.

Year 5:

In this unit children learn different styles of dance and focus on dancing with other people. They create, perform and watch dances in a range of styles, working with partners and groups.

Year 6:

In this unit children learn different styles of dance and focus on dancing with other people. They create, perform and watch dances in a range of styles, working with partners and groups.

Year 6/7:

In this unit children focus on popular dance styles of different eras. They explore a range of dances, using step and gesture patterns, body shapes, contact work, and contrasts in dynamic and rhythmic patterning. They learn more about both dance style and music.

In dance as a whole, children think about how to use movement to explore and communicate ideas and issues, and their own feelings and thoughts. As they work, they develop an awareness of the historical and cultural origins of different dances.

These units are divided into sections. Each section contains a sequence of activities with related objectives and outcomes. There is a mention to the section above, but without analysis to each of it, because such an analysis is irrelative to this project. The sections are:

- 1. Acquiring and developing skills.*
- 2. Selecting and applying skills, tactics and compositional ideas.*
- 3. Knowledge and understanding of fitness and health.*
- 4. Evaluating and improving performance.*

(<http://www.standards.dfes.gov.uk>, last accessed 29/03/08).

6. SIMILARITIES AND DIFFERENCES

The obvious similarity is the fact that dancing is part of the physical education and not a subject on its own, in both curricula. According to Maurovouniwtis et.al (2001) dancing can be characterised as a game. This is, as Maurovouniwtis et.al (2001) says, because dancing is reported to us as a form of standard, elements of game and it can be included in physical activity and physical education since dancing is a social, educational institution from ancient years. Moreover Almond (1997), by referring to the national curriculum of England for physical education, made an interesting point. The national curriculum states that *dance is an art form as such is an essential part of a balanced physical education programme. As well as the development of the artistic*

and aesthetic elements dance is also concerned with acquiring control, co-ordination and versatility in the use of the body, and helps flexibility and develop strength. The interesting point that Almond highlighted for this document is that, it is made clear that dance is considered as an essential part of balanced physical education, although it is an art form. Some argue that dance is an art form and the link with physical education is tenuous.

The next similarity is that traditional dances, traditional history and culture are taught in dancing lessons in both countries. This is essential for cultural education. Children develop their intra-cultural awareness through this kind of lessons. They learn about the history and about the manners and customs of the country they live in. There is a referring only to intra-cultural awareness because in Greece only Greek traditional dances are taught.

The above is the most important difference that Greek and English curricula have. In England students develop an awareness of the historical and cultural origins of different dances on different times and cultures. Thus, they develop their intercultural understanding, which is one of the most important issues of multiculturalism. They can make comparisons of different civilisations in different times or comparisons of different cultures in recent times. Through these comparisons they can understand more the other cultures and find similarities among cultures, from which their schoolmates might belong to.

According to Essinger (in Markou, 1966b) there are four vital principles for multicultural education:

1. Education for empathy. This means that we learn to understand the others, seeing their problems through our eyes and put our selves to their positions.
2. Education for solidarity. It is assumed to be a basic aim for the education in a human society.
3. Education for a multicultural respect. This respect can become a reality only if we open our minds and see the other cultures without fear and invite others to see our culture without fear, too.
4. Education against a nationalistic way of thinking. This means an extinction of nationalistic stereotypes and prejudices and opening dialog and communication with other ethnicities.

The question is how this multicultural awareness and multicultural education can occur in an educational system that offers teaching only in traditional dances of the host country. This educational system develops nationalistic thinking more than the multicultural one. It does not offer the chance to pupils to meet and learn about other cultures. Children do not have the opportunity to compare and find differences and similarities between their and other cultures. My opinion is that in a multicultural society there must be a space for other cultures to be introduced. This means that on the one hand, there must be a presentation and teaching for traditional dances of the host country, but on the other hand there should be a reasonable time to introduce

dances of other cultures and especially from countries that many pupils might come from. In this frame children can make comparisons and find that every culture has its own unity, but it also has similarities with other cultures. Children indirectly understand to accept others (schoolmates from other countries) and develop a multicultural awareness.

Another important difference is that children in England can develop their creativity and learn how to express their feelings and thoughts through many ways. As it has already been seen this is one of the characteristics of dance. Comparing the two curricula this is more obvious and easily seen through English dance- lessons than through Greek ones. According to the English curriculum in all years, children create their dances. In first year they are inspired by themes. In the next year they are inspired by exploring and communicate their own feelings, moods and thoughts. In the third year they develop creativity by creating and performing dances by linking a range of dance actions. In the next year creativity is developed by creating characters and narratives. In fifth year children create and perform dances from different styles. In the next year the starting point of their inspiration is a visual image and popular dance styles of different eras. It is clear, though, that there is a range of themes and starting points to help students to develop their creativity and inspire them. This can be used as long life learning, too. As children learn and understand that there are many ways to do something, and they can connect the creativity that they have developed in dance lessons with other aspects of their lives.

On the other hand, this important characteristic of dance is not offered so clearly in dance lessons in Greek schools. Children learn specific dances and they do not have the opportunity to explore their own abilities to other dance styles. Moreover, they do not have the opportunity to explore and create their own dances according to their feelings, thoughts, moods etc. Therefore, I believe that dance in Greek education has lost one of the most important characteristics.

7. DO THE DANCE-LESSONS IN GREEK EDUCATION PROVIDE ALL THE ADVANTAGES OF THE ACTIVITY?

At a first glance it is obvious that the aims of dancing, that the national curriculum had targeted, are fulfilled by teaching only Greek traditional dances. Nevertheless with a more careful study it can be said that some of the aims are not satisfied. According to the national curriculum, two of the aims are the development of emotional sections and the development of creativity. A typical dance lesson in Greek education is a presentation of the steps and a repetition of them by the pupils. In such a lesson, where the steps are standard and cannot be changed, how can creativity be developed and how can a student express his/her emotions?

Moreover, as it has been mentioned in this study the characteristics of a dance-lesson are more than the understanding of the traditional dancing and history.

Communication and socialization skills can be developed through a dance-lesson. In Greek education the kinds of traditional dances that are taught are, in the majority, all the class together in a circle dancing standard steps. Of course there is a degree of development of social skills but is it enough? Meaning that through other forms of dance these skills might be developed more.

The most important aspect though, is that in recent years one of the main aims of Greek education is the multicultural development. Even though dance is a good mean this development, as it has already been said, of, it is not one of the aims of dancing in Greek education. The question is why Greek education does not take advantage of the power that dance-lessons have in multicultural development. In this point it should be said that there is not any suggestion to stop teaching Greek traditional dances. It is very important for Greece, and for every country, to have and not to forget its roots. Children should learn and understand the history and civilization of their country. On the other hand, it is very important for children to develop multicultural skills. In recent years the population of Greece has changed, so it is essential for the education to change the curriculum and find ways to combine cultural and multicultural development.

8. CONCLUSION

From the above analysis it is clear that there should be some changes in the way that dance is taught in schools. First of all, Greece should borrow some tips from the English curriculum. The English curriculum for dance is educated-based and the Greek curriculum for dance is traditional development – based. Moreover, Greece as England should think about the position that dance has in its education and if this position should change, and whether dance should become a subject on its own.

Referring to the first point, Greece has to consider some borrows from England, such as multicultural education and developing creativity through dancing. England has been an import country for many years now, so it has been considering more years about the multicultural society than Greece, which became an import country the last decades, from an export country that was till then. It is understandable the reason why only Greek traditional dances were taught in schools, in the years when Greece was an exporting country. This was done exactly because Greek should have known and protected their culture when they had to move, meaning by that to develop their national identity. We should not forget that Greece has been an independent country for nearly two hundreds years. Thus, the priority of the Greek society was to reinforce the national identity. However, times have changed. Greece has become an exporting country and has many immigrants. Hence, Greece has become a multicultural society. Therefore, education should change and become multicultural. Children should develop their multicultural awareness without loosing of course their national identity.

The next suggestion that can be made for the Greek curriculum is to include the development of creativity in its schedule of dancing lessons. As it has already been mentioned, developing creativity is one of the main characteristics that dance has. This of course does not take place by just teaching children traditional dances. Children should have the opportunity to create and develop their own choreographies. As Brinson (1991) says dance experience is about moving freely. This means not only to learn to move freely but also to learn to see, hear and understand clearly beyond the classroom. It should be understandable that everyone can create choreography and can dance. In this frame children develop directly their creativity and indirectly their self-esteem, self-confidence, and respect for the others. These values are vital for every human being, and education must give opportunities to everyone to develop and reinforce them. These opportunities should be given through an enjoyable and unforced way, because only in this environment these values can flourish (Theodorakou, 2000). Dance is an activity, as already have been mentioned, that provides such an environment. So, the Greek curriculum should involve these kinds of lessons in their dance lessons.

The other point that both countries should consider is whether dance should be a part of physical education or not. Dance is not just a game that has some rules and some techniques (like basketball or football or athletics). To realise fully the contribution of dance in education should consider doing dance, creating dance, learning about dance and seeing dance. All these are very hard to be included only in some hours of physical education. By placing dance within a physical education programme, reduces the time and the opportunities that dancing can offer to pupils.

Dance should be a subject on its own in school curriculum in order to be able to offer all the values that it can offer. Brinson (1991) mentions, including others, that when dance is integrated fully into the school curriculum it can provide the development of artistic appreciation through judging the work of others; the education in personal relationships by working with others and appreciate the ideas of the others for a combined choreography; the better understanding of all cultures through studying and dancing dances from all countries around the world. Moreover, dance can be therapeutic, too (Schott- Billmann, 1997). As Aristotelis said certain forms of dancing (like Bacchanal dances) people could overcome depression crisis. Finally, if dance is a subject on its own, it can provide the opportunities and increase a young person's chances of realising what abilities and possibilities has to continue to dancing career.

Another point is that a physical education teacher does not have the complete education to teach a dance lesson well. Most of the physical educators are interested in sports. There are, also, limited lessons for teaching dance in the departments of physical education and sports in the Greek universities. This problem could be solved if universities provide more dance lessons and include a direction for physical educators that want to teach dance. However, to achieve this change the state

universities, should realise the value of dance and include this activity as a subject on its own to the school curriculum, or give more time to this activity in the frame of physical education.

9. SUGGESTIONS

This study is a bibliography comparison and analysis. There should be more experimental studies on this field, as in what degree the values of dance are developed in the Greek curriculum.

As a conclusion I would like to refer to a phrase that Bezar (1980) has said “*the speech separates, the dance unites*”.

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AN EXPLORATION OF SCHOOL CLIMATE IN CYPRUS

ANGELIKI LAZARIDOU*

ABSTRACT

The literature indicates consistently that school principals contribute to school effectiveness indirectly by cultivating school climates that support teaching and learning. In Cyprus little work has been done in this area. In this article the author reports findings from an investigation of school climate in Cypriot schools and, extrapolating from climate and effectiveness data for schools in Greece, argues for changes in the way Cyprus controls its schools and appoints school principals.

Keywords: School Climate; Principals; Organizational Effectiveness.

1. INTRODUCTION

Organizational climate has been a sustained interest in discussions about school administration, but recently there has been a resurgence of attention. The reason is that the link between climate and school effectiveness has been clarified significantly. Some ambiguities about the relationship have been eliminated with consistent findings that school administrators should not expect their activities to influence student outcomes directly, but can increase school effectiveness indirectly by cultivating climatic conditions that support better schooling and, hence, the outcomes of schooling. As a result much of the contemporary literature is about assessments of school climates and how school administrators can adjust them to support effective teaching and improved student achievements.

Much has been learned about the role of organizational climate in the schools of various countries, but relatively little work on this issue has been done in the schools of Greece and Cyprus. This is a concern because the results of international testing of student achievements – the OECD's PISA triennial surveys – indicate that the schools of Greece are not as effective as they may be desired, possibly because of less-than-optimal school climates (OECD 2009, 2010a, 2010b). This possibility is supported by research that presented schools in Greece as having climatic deficiencies (Kavouri [Καβούρη], 1999; Lazaridou and Tsolakidis, forthcoming). Whether this is also the case in Cyprus remains to be seen – Cyprus will start participating in the OECD's

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Acknowledgements: The contributions of the following are acknowledged with much gratitude: Christakis Georgiou, Theofanous Christoforos, Charalampous Anastasia, Athanasiou Frantzeska, Violari Antigoni, Konstantinou Maria, Panagiotou Maria, Fotopoulou Christalla, Pourou Theoti, Savoulidou Elena, Christou Stella and Panagi Maria.

PISA surveys in 2012 (Educational Research Centre, nd). Therefore, knowing something about the climates in Cypriot schools would allow us to speculate about the likely outcomes of the forthcoming PISA survey.

In keeping with this, an exploratory study of organizational climate in the schools of Cyprus was conducted. Here I report the findings and, on the basis of recent research on school climate and effectiveness in Greece, I will speculate about the likely results of PISA 2012 for Cyprus. I will end with observations about the potential implications for the administration and governance of schools in Cyprus.

2. THE NATURE AND IMPORTANCE OF SCHOOL CLIMATE

The first thing to note about organizational climate is that it is not a tangible thing – although it does arise from tangibles. The *tangibles* that give rise to climate are the routine organizational conditions and practices that give an organization its character or “personality” (Halpin, 1967; Sergiovanni and Starrat, 2002; Hoy and Miskel, 2008). The associated *intangible* – organizational climate – consists of the members’ *perceptions* of those conditions and practices. As such, organizational climate is a matter of mind(s).

A second feature of organizational climate is that it is multidimensional – that is, it results from several classes or sets of organizational features. For example, in early work on school climate, Halpin and Croft (1962) concluded that it was influenced by two clusters of factors: the characteristics of a school’s staff and the characteristics of the principals’ behaviours. Subsequently, Tagiuri (1968) and Owens (2004) proposed that the climate of an organization is determined by four clusters of factors: ecological, milieu, organizational or structural, and cultural.

Third, organizational climate is important to sociologists and administrators because it influences the attitudes and behaviours of an organization’s members (Schneider, Wheeler, and Cox, 1992; Ekvall and Ryhammar, 1999; Rafferty, 2003; Lunenburg and Ornstein, 2004; Hoy and Miskel, 2008). More specifically, climate influences how the members and other stakeholders of an organization choose to conduct its business – climate influences how they make decisions, seek to control events and people, provide leadership, and so on. In this way organizational climate influences an organization’s effectiveness.

In this connection, research in schools has shown consistently that a school principal’s leadership has an indirect influence on students’ achievements *through* the school climate she or he nurtures (Hallinger and Heck, 1998; Ekvall and Ryhammer, 1999; Leithwood, Jantzi, Earl, Watson, Levin and Fullan, 2004). As an OECD report on the effectiveness of schooling in numerous countries put it:

The relationship between strong leadership and good student results is not a direct one. Good leadership helps foster the kind of school climate in which learning

flourishes, rather than directly inspiring students to achieve. (cited in Mulford, 2003, p. 25)

In other words, more effective principals increase a school's effectiveness by positively influencing such dimensions of school climate as the way teachers organise and conduct their instruction, how teachers interact educationally with students, the expectations communicated to students, and so on.

3. ASSESSING ORGANIZATIONAL CLIMATE IN SCHOOLS

Two distinct and one hybrid perspective on school climate have been taken:

The first conceptualization is that advanced first by Halpin and Croft (1962), who described school climate in terms of four general variables: the degree to which teachers' and principals' behaviours were authentic, the amount of respect and openness in interpersonal relationships, the extent to which both teachers and principals provide leadership, and the relative importance given to task achievement and need gratification. A school was said to have an "open" climate if it was characterized by high authenticity, respect, and transparency in relationships, as well as shared leadership and equal attention to the needs of the organization and individuals. Nowadays the openness of school climate is often assessed with the Organizational Climate Description Questionnaire (OCDQ).

A second conceptualization of school climate is the "health" perspective, first advanced by Hoy and Feldman (1987). According to them the health of a school is a function of seven factors:

1. The quality of relationships among students, teachers, and administrators.
2. Teachers' attitudes toward colleagues, their work, their students, and striving for excellence.
3. Teachers' confidence in their own and their students' ability to achieve high goals.
4. Students' commitment to and respect of high academic achievement.
5. Friendliness and supportiveness of the principal.
6. The principal's expectations for teachers and the supports provided.
7. The quality of school-community relationships.

This perspective has been operationalized as the Organizational Health Inventory (Hoy and Tarter, 1997).

The third, hybrid perspective on school climate synthesises the openness and health perspectives. In one application of this perspective (Hoy, Smith and Sweetland, 2002) school climate is presented as a function of the relationship between a school and its community, between teachers and the principal, between the school and its students, and the interpersonal relationships among the teachers. The questionnaire developed by Hoy and colleagues to assess these four dimensions is the Organizational Climate Index (OCI). This instrument generates four corresponding

indices of school climate: environmental press, collegial leadership, professional teacher behaviour, and achievement press. In another application of the hybrid perspective, the Organization for Economic Co-operation and Development has researched school climate in terms of eight indices or dimensions of school climate: discipline, teacher support, achievement press, teacher-student relations, students' sense of belonging in school, principals' perceptions of teacher-related factors affecting the school climate, principals' perceptions of student related factors affecting the school climate, and principals' perceptions of teachers' morale and commitment (OECD, 2005).

4. ORGANIZATIONAL CLIMATE IN CYPRIOT SCHOOLS

The majority of available information relates to schools in North America and the UK – and its validity for the schools of Greece and Cyprus is moot. As a result, school administrators in the area should be cautious about generalizing the information to their schools – it has been shown that borrowing and lending information among nations is hazardous (Brundrett, Fitzgerald and Sommefeldt, 2006; Steiner-Khamsi, 2006). Therefore it would be useful to have information about contemporary school climates in Greece and Cyprus. Below are the results of an exploratory study conducted in Cyprus; further along in this article there is an extrapolation of effectiveness in Cypriot schools from data about schools in Greece.

5. AN EXPLORATION OF SCHOOL CLIMATE IN CYPRUS

5.1. Instrument and participants

For this investigation the Organizational Climate Index for secondary schools (OCI-SR) was used. This questionnaire allows teachers to record their perceptions of four dimensions of climate, as follows (Hoy, Smith and Sweetland, 2002):

Collegial leadership is directed toward meeting both the social needs of the faculty and achieving the goals of the school. The principal treats teachers as professional colleagues, is open, egalitarian, and friendly, but at the same time sets clear teacher expectations and standards of performance.

Professional teacher behaviour is marked by respect for colleagues' competence, commitment to students, autonomous judgment, and mutual cooperation and support.

Achievement press consists of high but achievable academic standards and goals. Students persist, strive to achieve, and are respected by each other and teachers for their academic success. Parents, teachers, and the principal exert pressure for high standards and school improvement.

Institutional vulnerability is the extent to which the school is susceptible to vocal parents and citizen groups. High vulnerability suggests that both teachers and principals are unprotected and put on the defensive.

The questionnaires were completed by 140 teachers from 13 schools in Nicosia and the surrounding area. Of those schools, 3 were secondary and the rest elementary. On average 12 teachers from each school answered the questionnaire.

5.2. Data analysis and findings

Initially school scores for each of the four dimensions of climate were calculated. These dimension scores were then standardized so that they could be compared with the scores of Hoy, Smith, and Sweetland's (2002) normative sample of schools. Those standardized scores have a mean of 500 and a standard deviation of 100, meaning that normally about two thirds of schools will have standardized scores between 400 and 600. To accentuate notable features and patterns in the scores, they are presented with colour coding in Table 1 and then graphically in Figure 1.

In Table 1 two features are of note. First, schools 6, 9, 12, and 1 had the highest sub-scale scores. These sub-scales scores contributed most to making these schools' climates more open.

Second, the profile of school 12 raises important questions. Its climate profile includes a high "institutional vulnerability" score. As explained earlier, this high score indicates that the teachers of this school felt that it was subject to fairly intense pressures from vocal parents and other groups in the community. The specific questionnaire items are:

2. A few vocal parents can change school policy.
6. Select citizens groups are influential with the board.
9. The principal responds to pressure from parents.
12. Teachers feel pressure from the community.
26. The school is vulnerable to outside pressures.

By itself, this institutional vulnerability score could be taken as "openness" of climate that is positive, indicative of the school's personnel being receptive to healthy critique and responsive to community circumstances and needs. On the other hand, it could be an indication that the school was under attack.

In this connection it is significant that the school's profile also contains an "achievement press" score that reflects a shared perception of a moderate push for high standards and school improvement. In addition, there is a very low score on the "collegial leadership" dimension, which indicates a perception among the teachers that the principal did not treat teachers as professional colleagues; was not open, egalitarian, and friendly; and failed to set clear performance expectations for teachers. The rather low "professional teacher behaviour" score is therefore not surprising. This could be a school with a serious problem.

TABLE 1: CLIMATE DIMENSION SCORES – INDIVIDUAL SCHOOLS

School	Collegial Leadership	Professional Teacher Behavior	Achievement Press	Institutional Vulnerability
1	418	608	534	523
2	468	431	410	476
3	504	434	362	415
4	242	416	372	487
5	566	498	498	520
6	516	547	530	732
7	468	454	360	421
8	382	564	519	386
9	596	646	402	390
10	415	473	455	527
11	451	399	381	467
12	182	324	491	629
13	333	403	453	386

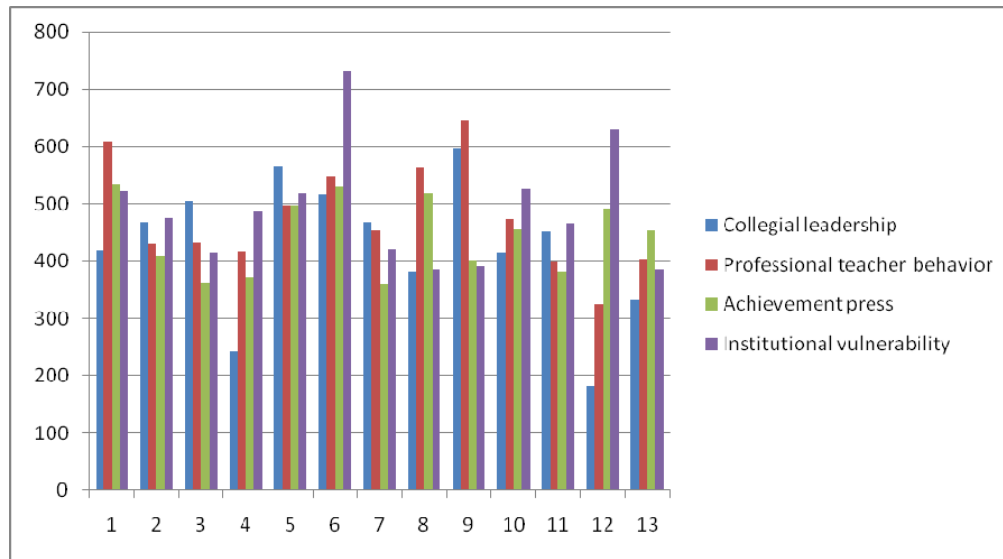
100-200	200-300	300-400	400-500	500-600	600-700	700-800
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Turning now to the bar graph, the overall pattern is that five schools (Number 1, 2, 5, 6, and 10) had climate profiles that fell fully in the 400-600 range – which might be called the “middle of the normative pack” range. Those schools constitute only 38% of the sample, whereas about 64% of Hoy, Smith, and Sweetland’s (2002) normative schools scored in this range.

If we include schools 9 and 11, which came close to being at or above 400 on all four dimensions, the percentage rises to 54% – still less than in the normative sample. Not surprisingly, therefore, the standardized dimensional scores calculated from the aggregated data all fall somewhat below the standardized mean of 500:

Collegial leadership	437
Professional teacher behaviour.....	488
Achievement press.....	438
Institutional vulnerability	479

FIGURE 1: CLIMATE PROFILES – INDIVIDUAL SCHOOLS



Be that as it may, it should be emphasized that this sample of Cyprus schools had climates that are within the normal range. The score of 488 on the professional teacher behaviour scale indicates that the teachers in these schools saw themselves and their colleagues as competent, co-operative, committed to promoting students’ welfare, having autonomy in professional decision making, as well as being respectful and supportive to one another. The score of 479 on the institutional vulnerability scale, though, indicates that they saw their schools as somewhat subject to pressures by vocal parents and citizen groups. And the collegial leadership and achievement press scores seem to point to areas where efforts to improve the climate in these schools might be concentrated first.

So what do these data say about the likely effectiveness of the schools? Nothing. However, given that there is a demonstrated relationship between school climate and school effectiveness, we could speculate tentatively about the effectiveness of these Cypriot schools by extrapolating from climate-effectiveness data for schools in Greece.

6. CLIMATE AND EFFECTIVENESS IN SCHOOLS OF GREECE

In this section I provide an overview of findings from another investigation of school climate in Greece and relate those findings to data about the effectiveness of Greek schools that have been accumulated by the OECD over the years 2000-2009. In this

section my objective is to lay the groundwork for speculation about the likely effectiveness of the Cyprus schools described above.

6.1. School climates in Greece

More or less cconterminously with the investigation reported above, I explored teachers' perceptions of the organizational climates in a sample of schools in Greece (Lazaridou and Tsolakides, forthcoming). The findings, though not comparable directly, are thought-provoking, especially in light of OECD effectiveness data for schools in Greece (OECD, 2004, 2009, 2010a).

In our research we used a Greek translation of Hoy's Organizational Description Questionnaire for Secondary Schools – the OCDQ-RS. The survey was conducted in the schools of a Northern Greece prefecture or district, with 86% of the schools participating and 444 teachers returning usable questionnaires.

The OCDQ assesses five aspects of school climate: supportive principal behaviour, directive principal behaviour, teacher engagement, distractions from the basic tasks of teaching, and the cohesiveness of social relationships. The questionnaire therefore produces five sub-scale scores, and these can be standardized (mean = 500, SD = 100) so as to allow comparison against Hoy's New Jersey sample.

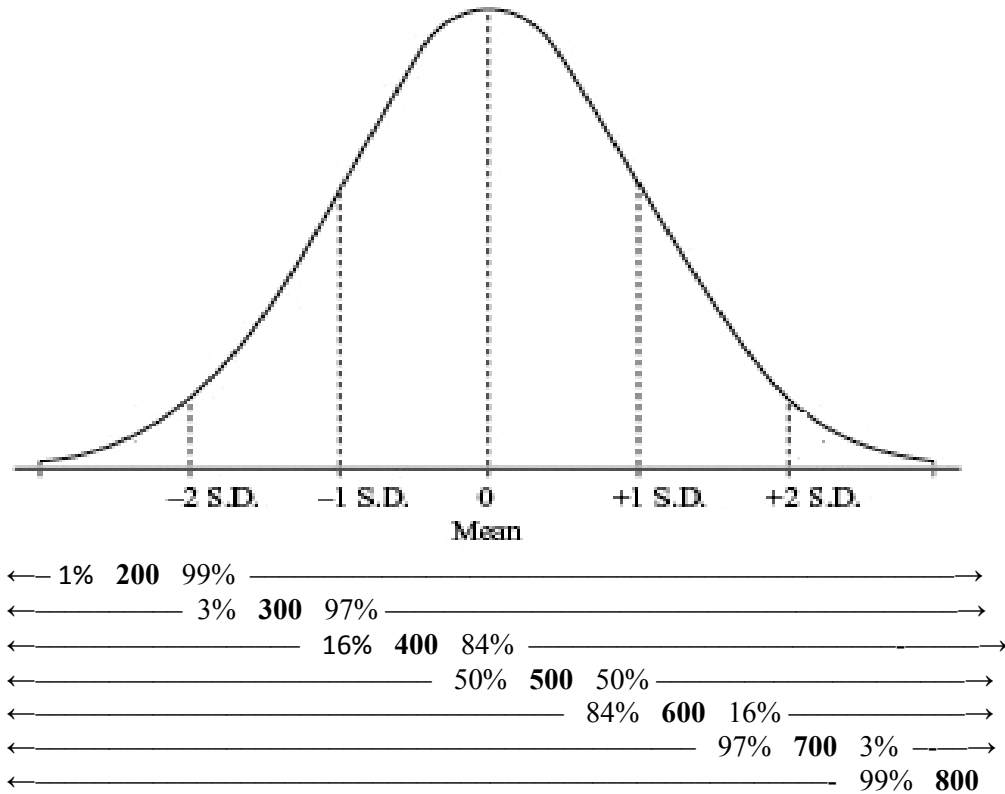
The survey of the schools in this prefecture in Greece produced the following standardized scores:

Supportive principal behaviour	474
Directive principal behaviour	449
Teacher engagement	367
Distractions from teaching	500
Intimacy behaviours	467

For now we will ignore the specific organizational features that underlie these dimensions of climate – they will be considered later in this article, when the findings for Greece and Cyprus are considered together. What is important at this juncture is where these standardized climate scores fall in Hoy's normal distribution.

As Figure 2 reveals, four of the five climate scores for the sample of schools in Greece ranged from the standardized mean of 500 to a little more than half a standard deviation below the mean. In general, then, the climates in these Greek schools were somewhat below average, though still well within the “middle of the pack” range. The significance of this finding emerges when it is related to findings concerning the effectiveness of schools in Greece.

FIGURE 2: INTERPRETING STANDARDIZED SCORES ON THE OCDQ



6.2. School effectiveness in Greece

Credible measures of the effectiveness of schools in Greece are found in the OECD's reports for PISA, its periodic worldwide evaluations of 15-year-old school pupils' scholastic performance. The PISA survey was conducted first in 2000, then repeated every three years since (OECD, 2010a). Forty-three countries took part in PISA 2000, 41 in PISA 2003, 58 in PISA 2006, and 74 in PISA 2009. Those surveys focused on scholastic achievements in reading, mathematics, and science; more recently, problem solving has been added.

Greece has participated in all rounds of PISA to date; Cyprus none. But Cyprus will be participating in the 2012 survey (Educational Research Centre).

The PISA achievements of students in Greece, extracted from various OECD-PISA documents, are summarized in Table 2.

TABLE 2: GREEK STUDENTS' ACHIEVEMENTS AND RANKINGS IN PISA SURVEYS

	2000		2003		2006		2009	
	PISA Score *	Country Rank	PISA Score	Country Rank	PISA Score	Country Rank	PISA Score	Country Rank
Reading	474	25 th	472	30 th	459	39 th	483	32 nd
Mathematics	447	28 th	445	32 nd	460	36 th	466	39 th
Science	461	25 th	481	30 th	473	38 th	470	40 th

* The average score among OECD and partner countries is 500 points and the standard deviation is 100 points. About two-thirds of students across OECD countries score between 400 and 600 points.

These scores range from 445 to 483, all below the mean for all countries but no more than half a standard deviation. Furthermore, there are no clear trends in the scores over time.

It could be said, therefore, that schools in Greece are about average in effectiveness as measured by the PISA tests of literacy, mathematics, and science.

6.3. Relationship between climate and effectiveness

If one accepts the PISA measures as indicators of school effectiveness, it can be argued that the Greek data I reviewed above show a one-to-one relationship between openness of school climate and school effectiveness. Indeed the assumption and proposition are justified by what other research has demonstrated. Therefore, it is not unreasonable to hypothesize that the relationship will hold in Cyprus, whose culture is similar to that of Greece.

7. EXTRAPOLATING TO CYPRUS FROM GREECE

There is no question that the OCDQ and the OCI describe school climate differently.

TABLE 3: COMPARISON OF OCDQ AND OCI ITEMS

OCDQ - RS	OCI
Supportive Principal Behaviour	Collegial Leadership
Motivates teachers with constructive criticism	The principal explores all sides of topics and admits that other opinions exist
Models hard work	The principal treats faculty members as equals
Helpful	The principal is friendly and approachable
Concerned with the personal and professional welfare of teachers	The principal lets faculty know what is expected of them
Directive Principal Behaviour	The principal maintains definite standards of

An Exploration of School Climate in Cyprus

	performance
Rigid and domineering supervision	The principal puts suggestions made by the faculty into operation
Close and constant control of all teachers and activities to the smallest details	The principal is willing to make changes
Teacher Engagement	Professional Teacher Behaviour
High faculty morale	Teachers help and support each other
Proud of the school, enjoy working with each other, supportive of colleagues	Teachers accomplish their jobs with enthusiasm
Concerned about each other; committed to the success of students	Teachers respect the professional competence of their colleagues
Friendly with students, trust students	The interactions between faculty members are cooperative
Optimistic about the ability of students to succeed	Teachers in this school exercise professional judgment □ Teachers “go the extra mile” with their students
Distractions from Teaching	Teachers provide strong social support for colleagues
Interference by administration and colleagues that distracts from teaching	Achievement Press
Excessive duties, administrative paperwork, nonteaching duties	The school sets high standards for academic performance
Teachers irritate, annoy, and interrupt each other	Students respect others who get good grades
Intimacy Behaviours	Students seek extra work so they can get good grades
Strong, cohesive network of social relationships among faculty	Parents exert pressure to maintain high standards
Teachers know each other well, are close personal friends, socialize regularly	Students try hard to improve on previous work
	Academic achievement is recognized and acknowledged by the school
	Parents press for school improvement
	Students in this school can achieve the goals that have been set for them
	Institutional Vulnerability
	A few vocal parents can change school policy
	Citizens groups are influential with the board
	The principal responds to pressure from parents
	Teachers feel pressure from the community
	The school is vulnerable to outside pressures

The two questionnaires differ not only in terms of items and dimensions but also in the perspectives on organizational climate that underlie them – the openness perspective for the OCDQ, the hybrid perspective (openness + health) for the OCI. Therefore direct comparison of the climate profiles reported above is not possible. Nonetheless it is interesting to note the similarity in the very general picture they provide. In both

cases the schools are depicted as having quite open/healthy climates that are somewhat below the central point (500) of the standardized distribution. If anything, the overall profile based on the perceptions of the teachers in Greece appears to be a little more open.

TABLE 4: COMPARISON OF SCHOOL CLIMATES

Cyprus – OCI		Greece - ICDQ	
Collegial Leadership	437	Supportive principal behaviour	474
Professional teacher behaviour	488	Directive principal behaviour	449
Achievement press	438	Teacher engagement	367
Institutional vulnerability	479	Distractions from teaching	500
		Intimacy behaviours	467

This brings me, then, to the point where I speculate – admittedly with considerable trepidation – about the outcomes of the coming PISA assessment of Cypriot students’ academic achievements and, by extension, the effectiveness of said schools. On the basis of the climate data presented above and the assumption that in Cyprus, too, school climate relates directly to school effectiveness, I would expect the Pisa scores for Cyprus to come out below the mean for all countries but within half a standard deviation of the mean. Further, I would expect the world ranking for Cyprus to be in the range of 30th to 40th among 75 or so participating countries (OECD, nd).

8. CONCLUSION

Knowledge of an organization’s climate – the organization’s characteristic internal conditions – constitutes a potent, empirically proven “lever” that administrators can use to improve the organization’s effectiveness. This investigation revealed that a sample of secondary schools in Cyprus had generally satisfactory climates but that some dimensions of climate could do with improvement. Specifically the data recommended that attention be devoted to improving relationships between teachers and principals, school staff and students, and school and community (See Table 3 for specific items).

The importance – and urgency – of initiating efforts to improve school climate and effectiveness is established by the OECD’s well-researched conclusion that:

Many advanced countries [need] to tackle educational underperformance ... Otherwise, the high social and economic cost of poor educational performance ... risks becoming a significant drag on [their] economic development (2010b, p. 3).

The findings of this research suggest that Cyprus schools could benefit from at least two governance initiatives that would increase the school principals’ ability to cultivate open climates. First, the nation’s political and social leaders have to reduce reliance on bureaucratic “command and control” so as to make room for structures and

processes that give school principals and staff considerable discretion in determining how resources are allocated and used (Athanasoula-Reppa and Lazaridou, 2008; OECD, 2010a).

The best-trained leaders in the world are unlikely to succeed or last in a system that too often seems to conspire against them. It requires state and district policies aimed at providing the conditions, the authority, and the incentives leaders and their teams need to be successful in lifting the educational fortunes of all children (de Vita, 2007).

Second, the system for appointing school principals has to be adjusted to emphasise professional skills and merit rather than long service and political affiliations (Athanasoula-Reppa and Lazaridou, 2008).

Long periods of socialization before taking up a principalship apparently contribute to conservative outlooks, maintenance of the status quo, and a lack of readiness for emerging demands of the role.

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THE LEGISLATION FRAMEWORK AND SOCIAL POLICY FOR PEOPLE WITH DEVELOPMENT DISABILITIES IN THE EUROPEAN UNION

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ABSTRACT

The European Disability Forum (EDF) is the umbrella body of the European disability movement representing the interests of fifty million European persons with disabilities and their families ranging from physical, sensory, intellectual disabilities, persons with mental health problems and people with complex and multiple disabilities. The problem of discrimination against disabled people is not the problem of a small minority. Fifty million people in the EU are disabled; about 10% of the overall EU population. Discrimination, in its many forms, is a daily reality for most disabled people and their families. It is not limited to any particular country or any particular part of society, but it is a widespread phenomenon that prevents disabled people from fulfilling their potential. Recently, attempts to address the problem of discrimination have typically focused on awareness raising measures and voluntary codes of practice, as well as legislation relating to specific areas. The aim of this paper is to provide a legislation framework with reference to European Union member states in order to meet the objectives of their employment strategies, including the enhancement of employment opportunities for people with disabilities and furthermore to point some of the certain issues relating to the employment strategy, related social-policies and perspective plans of people with developmental disabilities in European Union.

Keywords: Disability; Legislation; Social Policy; Rehabilitation; European Member States.

1. INTRODUCTION

Discrimination remains a daily experience for most of the fifty million disabled people in the European Union, their families and friends. It affects all areas of life, from education to access to all goods and services, undermining the respect of the most fundamental rights of all disabled persons. At a time when unemployment and social exclusion have re-emerged with considerable intensity, several member states

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have realised that the insertion of appropriate social provisions in public procurement legislation constitute the best possible economic incentive to promote direct employment of discriminated workers, such as disabled people in the private sector, for instance in Spain, Greece, France, Denmark, Germany. However, the most efficient legislation is threatened to be withdrawn in the name of compliance with the European strictly economic approach focused on achieving competitive tendering in a unified internal market. This paper attempts to analyse the legislation framework for people with disabilities with reference to European Union' member states in order to meet the objectives of their employment strategies.

2. DISABILITY: THE DEFINITION ISSUE

From a legal point of view, the disable individual is a person “who presents a handicap as a result of various physical, sensorial, psychic and mental disabilities, denying them or because of them limiting the participation, under equal terms, in social life, in relation with age, sex, social, material and cultural factors, and who should be carefully and specifically attended towards social integration”. In the context of experience of health the following definitions are suggested by the ICIDH (International Classification of Impairments, Disabilities, and Handicaps, World Health Organization 1980 and OECD, 1998).

- *Impairment* is defined as any loss or abnormality of psychological or anatomical structure or function;
 - *Disability* is defined as any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being;
 - *Handicap* is defined as a disadvantage for a given individual, resulting from impairment or a disability that limits or prevents the fulfillment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual
- (Source: World Health Organization (1980): International Classification of Impairments, Disabilities, and Handicaps, 1993 Reprint. Geneva).

Table 1 illustrates some of the main disability definitions for selected member states.

TABLE 1: DISABILITY DEFINITIONS AND ELIGIBILITY

	Definitions
Germany	<ul style="list-style-type: none"> • <i>"Global definition"</i>: A disabled person is one whose bodily function or mental capability or mental sanity differ with high probability more than six months from the typical state of their age-group, so that their participation of society living is impaired. This can include people with movement restrictions, facial distortion, sickness or bodily malfunctioning, blind, deaf, and mute, learning disability and mental disability. • Mental disability can be of a physical origin, mental disorder, addictions and neuroses and personality disturbances.
Greece	<ul style="list-style-type: none"> • <i>"Global definition"</i>: Any chronic physical or mental illness or impairment that causes at least 50% loss of normal earning. There are various sub-categories defining secondary disability types.
Israel	<ul style="list-style-type: none"> • <i>"General disability"</i>: physical, intellectual, or psychological impairment resulting from birth, sickness, or accident that causes inability to support oneself from work. • Physical impairment assessed by committees of National Insurance Institute (NII); Intellectual disability is assessed by the Ministry of Labor and welfare. Defined as limited intellectual ability caused by developmental delay or impairment, and associated with problems in behavioral adjustment. Blind is assessed by the Service for the Blind Person at the Ministry of Labor and Welfare (2001). • <i>"Work-related injury"</i>: loss of ability to make a living due to an injury which occurs during or on the way to/from work (Defined by the National Insurance Institute (NII)). • <i>"Disabled Veteran"</i> - A disability as a result, during or on the way to and from army duty (Defined by Ministry of Defense).
Netherlands	<ul style="list-style-type: none"> • <i>Physical disability</i>: functional disorders to a certain extent in walking, arm/hand movement, vision, hearing, speaking, stamina, defecation or balance, etc. • <i>Intellectual disability</i>: severe restrictions in intelligence and abilities of social adaptation. • <i>Chronic illness</i>: an irreversible disorder, with no prospect of complete recovery (including long lasting psychiatric complaints and people with somatic disorders). • <i>Labour handicapped</i> are people with impaired job opportunities resulting from an illness or limitation at the moment of medical examination..

Source: Rimmerman, et al. (1998)

3. THE EUROPEAN SOCIAL POLICY FRAMEWORK

On 17 October the Council Employment and Social Affairs adopted the Framework Directive on equal treatment in employment and occupation. This newly adopted Directive will provide important protection against discrimination in the field of employment and training for 37 million disabled citizens in the E.U. (Albeda,

1985). The Employment and Social Affairs Council has reached political agreement on the setting of quantitative objectives on fight against social exclusion and poverty proposed by the High Level Group on Social protection. This decision will have major implications for disabled people at National level. This decision is part of the coordinated approach decided at the Lisbon Council: every year the EU member states define joint objectives to be translated in national action plans (Dalley, 1991). The objectives are set around four main axis:

- (1) Promote participation to employment and universal access to resources, rights, goods and services;
- (2) Prevent risks of exclusion;
- (3) Action for the most vulnerable persons; and
- (4) Mobilise all the relevant actors.

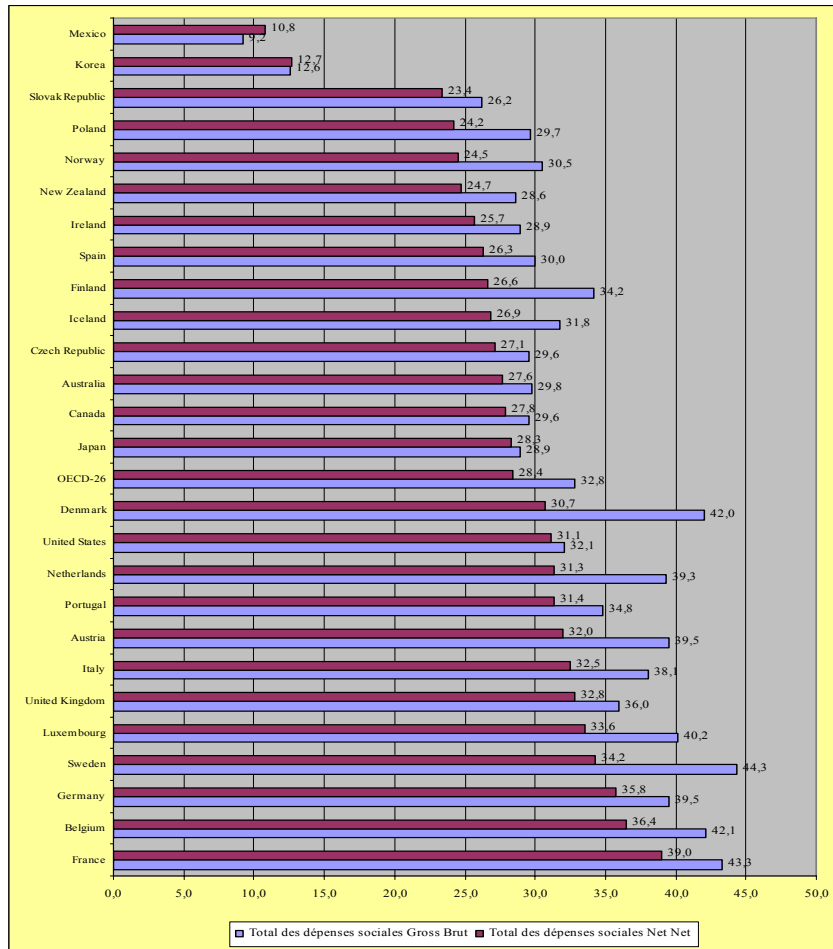
The objectives take into account the multiple dimension of exclusion as underlined by the Lisbon Council conclusions, for instance, employment, education, vocational training, health and housing and the specific target groups. The Council explicitly mentions disability as a key factor leading to exclusion and poverty. Member states have also decided to implement this objective not only through specific actions, but also through mainstreaming across all other objectives of the new coordinated strategy. Moreover the specific needs of disabled persons are highlighted in the objective relating to knowledge based society and information technologies. The European Commission agreed on an employment package to advance reform of EU labour markets and encourage member states to create new jobs and develop job-friendly policies (Degener et. al, 2000). Figure 1 illustrates the total social expenditures (both public and private) for OECD countries.

The annual employment package is divided in three-parts (ECOTEC, 2000):

- (1) A report on the employment performance of member states;
- (2) Set of recommendations addressed to each individual member state; and
- (3) Policy guidelines for the future.

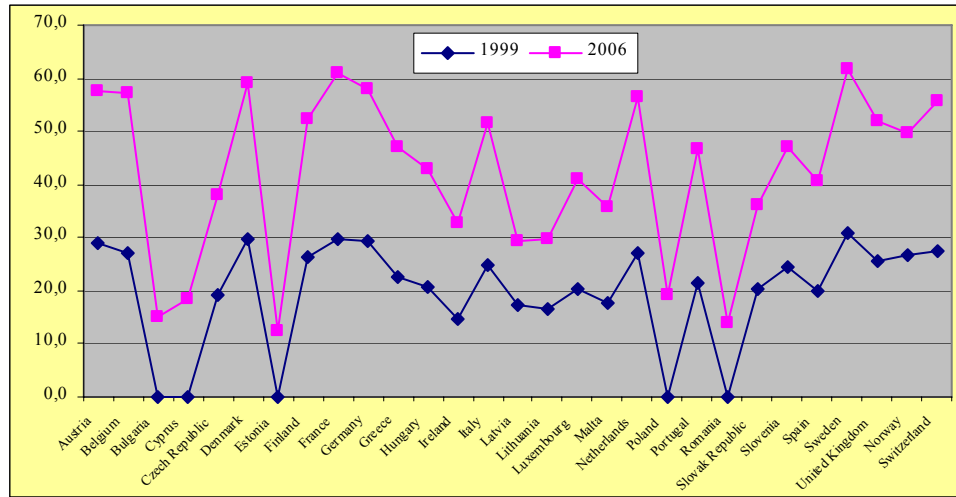
Member states will have to "implement appropriate measures to meet the needs of the disabled, ethnic minorities, and migrant workers as regard to their integration into the labour market and set national targets where appropriate for this purpose". Figure 2 illustrates the expenditures for social protection in EU member states.

FIGURE 1: TOTAL SOCIAL EXPENDITURES (PUBLIC AND PRIVATE)



Source: OECD Database

FIGURE 2: EXPENDITURES IN SOCIAL PROTECTION IN EU, 1999 – 2006 (% OF GDP)



Source: Eurostat Database (2009)

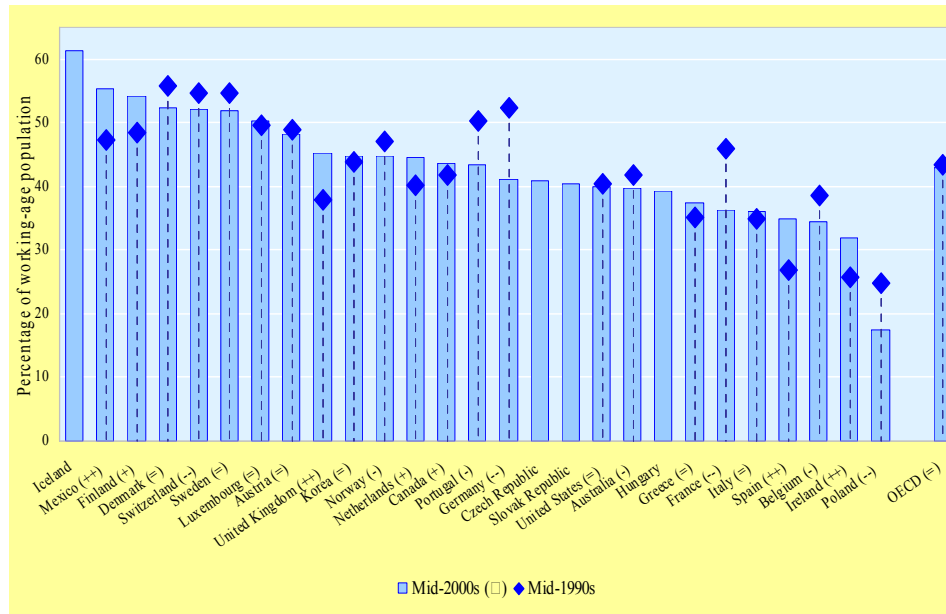
Furthermore, an additional recommendation has been made on coherent social “inclusion policy”: "A coherent set of policies which promote social inclusion by supporting the integration of disadvantaged groups and individuals into the world of work, and combat discrimination in access to, and on the labour market is called for".

In addition member states will have to ensure that policies relate to (United Nations, 2001):

- employability, entrepreneurship and job creation;
- adaptability, and equal opportunities for women and men contribute to raising quality in work;
- diversity and non discrimination, gender equality;
- health and safety;
- flexibility and security;
- work organization and work-life balance; and
- social dialogue and worker involvement, together with the overall work performance and productivity.

Furthermore, Figure 3 illustrates the employment of working age population with disabilities.

FIGURE 3: EMPLOYMENT OF WORKING AGE POPULATION WITH DISABILITY



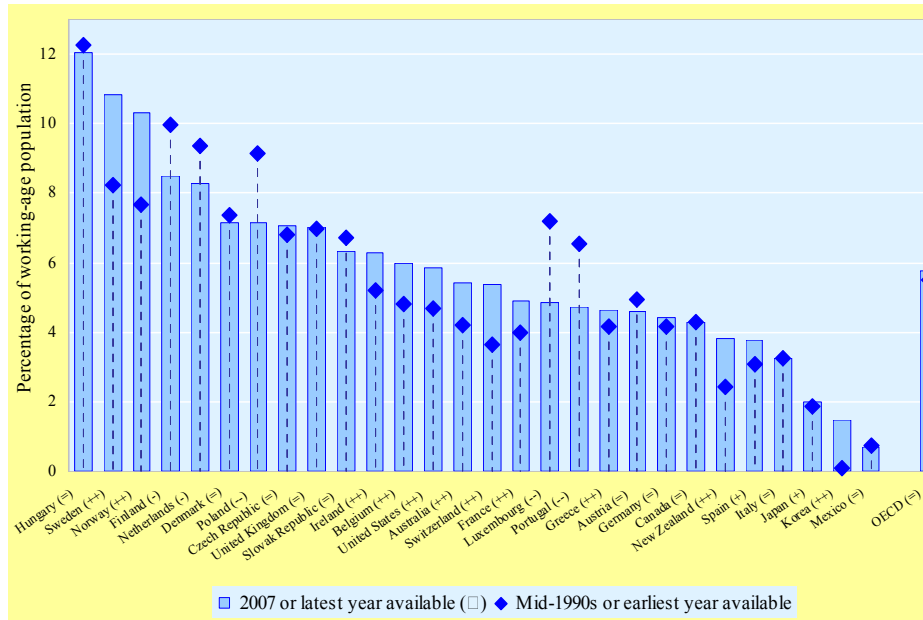
Source: OECD Database

The structural funds have been a major E.U. financial instrument for structural policies. It is also significant for disabled people, mainly in terms of the support for employment policies, but also in terms of support for certain transport infrastructure and for urban development (Thornton and Lunt, 1997). Figure 4 illustrates the disability benefit recipients as a percentage of population aged 20-64. In summary, we can classify the following main policy tools:

- *Public funding*: expenditure on health incurred by central, state, regional and local government authorities, excluding social security schemes.
- *Private social insurance*: Expenditure on health incurred by private social health insurance funds, such as friendly societies, mutual societies, voluntary schemes.
- *Out of pocket payment*: Household out-of-pocket expenditure comprise cost-sharing, self-medication and other expenditure paid directly by private households, irrespective of whether the contact with the health care system was established on referral or on the patient's own initiative. The former relates to provisions of health insurance or third-party payers for beneficiaries to cover part of the medical cost via a fixed amount per service or a set share of the price tagged to services or a fixed amount to be born before the third-party gets involved.

- *Self-medication*: includes informal payments extracted by medical care providers above the conventional fees, to over-the-counter prescriptions and to medical services not included in a third-party payer formulary or nomenclature of reimbursable services.

FIGURE 4: DISABILITY BENEFIT RECIPIENTS (% OF POPULATION) AGED 20 – 64



Source: OECD Database

4. THE EUROPEAN DIRECTIVES AND LEGISLATION FRAMEWORK

An estimated number of 35,000,000 disabled people live in Europe and their legal situation differs from country to country. To make sure that all disabled persons in Europe will be legally protected against discrimination, disabled people in Europe fought for the inclusion of an anti-discrimination clause in the Amsterdam Treaty which sets the standards for all social legislation in the member states of the European Union (Waddington 1995). Article 13 is a non-discrimination article which specifically mentions disability. This article has no direct impact on the legal situation of disabled people, it merely gives the European Union the permission to act against discrimination if it wishes to do so - and it might well be that we will have to wait a long time for this to happen.

In order to facilitate the work of the EU, following a wide consultation among the European disability movement has drafted a proposal for a directive, which was for the first time presented to the EU leaders in 2003. The text has been revised and updated in 2007 in order to comply with the current social and political context, as well as with the level of protection adopted at the international level, following the recent adoption of the United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2001).

There are 50 million disabled people in the European Union, who claim and will continue to fight for the respect of their most fundamental human, civil and economic rights, on equal basis to non-disabled people. It is the moral obligation and competence of the European Union, to protect the rights of all its citizens and to actively fight discrimination, as recognised by Article 13 of the EU Treaty and the EU Charter on Fundamental Rights, which has now been incorporated in the EU Treaty. Only a new European legislation that will result in a common standard of protection from discrimination on the ground of disability, to be applicable in all EU member states, can effectively dismantle the existing barriers and avoid the establishment of new ones.

For the first time in its history, the European Communities signed in March 2007 a Human Rights Treaty: the United Nations Convention on the Rights of Persons with Disabilities. The Convention, the first of its kind specifically addressing disability, covers the civil, political, economic, social and cultural rights of people with disabilities and requires that all States Parties ‘prohibit all discrimination on the basis of disability’. All EU Member States, except Latvia, have signed this Treaty, which will have to be implemented in all EU and national legislation and policies, once entering into force. Spain and Hungary have already ratified this instrument.

The proposal for a disability-specific directive has a wide scope as it covers a wide range of fields including:

- social protection and social security;
- health care;
- social advantages;
- education;
- access to and supply of services; and
- access to information and procedures.

The Directive also addresses remedies and enforcement, and provide for the establishment of a body or bodies for the promotion of equal treatment with regard to disability. The directive protects all people perceived as disabled, including:

- everybody who currently has a disability;
- people associated with a person with a disability through a family or other relationship people perceive as disabled; and

- people who had a disability in the past; people who have a genetic predisposition to become disabled and people who may have a disability in the future.

The Directive will complement and secure the existing European legislation and initiatives aiming to combat discrimination against disabled people and because it does not make sense to prohibit discrimination in one area whilst allowing for it in another.

Certain legislation is in force in the UK and in European Union which provides a legal framework for implementing equal opportunities in society. In the list below are a few of the Acts which deal with disability discrimination:

The Equal Pay Act 1970 (EPA) (amended 1983): Under this Act a person has a right to the same contractual pay and benefits as a person of the opposite sex in the same employment, providing:

- The man and woman are doing like work
- The work is rated as equivalent
- The work is proved to be of equal value

Disability Discrimination Act (DDA) 1995: The DDA introduced laws aimed at ending the discrimination that many disabled people face. It gave disabled people new rights in terms of employment and access to goods, facilities and services, education and public transport. The DDA requires ‘reasonable adjustments’ to be made by organisations supplying goods or services. Service providers should ensure, through making the reasonable adjustment, that a person with a disability can gain access to the service or provision.

The Disability Discrimination Act 1995 (Amendment) Regulations 2003: These regulations make a number of significant changes to the employment provisions of the Disability Discrimination Act (DDA) including the exemption of small employers from the scope of the DDA and ending a number of occupational exclusions (e.g. the police, prison officers, barristers in chambers and partners in business partnerships). These regulations came into force in October 2004.

The Disability Discrimination Act 1995 (Pensions) Regulations 2003: These regulations prohibit discrimination against, and harassment of, disabled people by trustees and managers of occupational pension schemes. The regulations require them to make reasonable adjustments where their practices, provisions or criteria, or their premises place a disabled person at a substantial disadvantage in comparison with persons who are not disabled. These regulations came into force on 1 October 2004.

Disability Discrimination Act 2005: Designed to extend rights for disabled people, and clarify and extend provisions of the DDA 1995. It extends the definition of disability, and gives protection against discrimination for people in public service, such as councillors. There are strong new disability equality duties for the public sector in delivering its services. Amendments on housing adaptations are also introduced. The Disability Discrimination Act 2005 also places a duty on Local Authorities, Fire and Police Authorities, and National Park Authorities to publish a Disability Equality Scheme by December 2006. Schemes should have due regard of the need to:

- promote equality of opportunity between disabled persons and other persons;
- eliminate discrimination that is unlawful under the Act;
- eliminate harassment of disabled persons that is related to their disabilities;
- promote positive attitudes towards disabled persons;
- encourage participation by disabled persons in public life; and
- take steps to take into account of disabled persons' disabilities, even where that involves treating disabled persons more favourably than other persons.

The Special Educational Needs and Disability Act (2001): This Act (SENDA) proposes institutional responsibilities. It covers all publicly funded higher and further education institutions, other designated institutions and LEA post-16 provision.

5. CONCLUSIONS AND POLICY IMPLICATIONS

Since the year 2001, the European Disability Forum (EDF) lobbies the European Union and its member states for the adoption of a European disability directive that will guarantee the full inclusion and equal participation of disabled people in society. The proposal for a Directive is also encouraged by the adoption, in December 2006, of a United Nations Convention on the Rights of Persons with Disabilities. This international Treaty was signed by the European Communities in March 2007.

Most member states have undertaken a review of their policies and priorities. Considering the scale of the problem and the degree of effort which is required, action in this field should be re-thought. The many problems and barriers people with disabilities are facing in the labour market would indicate that a multi-pronged approach is necessary to tackle the issue. These issues include:

- (a) Setting clear goals and targets. Clear targets should be set to increase the participation of people with disabilities in educational and training programmes at community and national levels.
- (b) Mainstreaming disability issues People with disabilities should have equal access to mainstream services which serve the whole population, while ensuring that these

services are delivered in a way which recognises and accommodates the specific needs of disabled people.

(c) Ensuring better access to education and training for people with disabilities.

(d) Reviewing the design of income support systems in general and disability related arrangements in particular, to allow successful preventive and early intervention.

(e) Increasing and diversifying active labour market schemes, Active policies should come together in a comprehensive pathway where income benefits, occupational rehabilitation, vocational training rehabilitation, guidance, counseling, job subsidies, on-the-job support, care services and job creation measures can synergise to the benefit of people with disabilities.

(f) Ensuring better access to job creation. People with disabilities should have better access to regional and local economic development and should be involved in setting priorities for public investment in job creation.

(g) The growing recognition of the important consequences of the direct and indirect discrimination faced by people with disabilities on the labour market should lead to the development of a wide range of measures to tackle the problem, including legislation where appropriate.

(h) Fostering a new and safer workplace culture Enterprises in which disability is seen as an abnormality are quick to remove disabled people from the work environment and often paternalistically transfer them to a programme of care. The framework directive 89/391/EEC already foresees that the employer should adapt the work to the worker.

APPENDIX A
**TABLE A: EXPENDITURE ON SOCIAL PROTECTION PER HEAD OF
POPULATION IN EUROS (1990 – 2006)**

	1990	1991	1999	2000	2001	2002	2003	2004	2005	2006
Austria	4.406	4.725	7.178	7.365	7.615	7.906	8.154	8.356	8.562	8.845
Belgium	4.108	4.417	6.299	6.514	6.875	7.260	7.712	8.157	8.557	9.078
Bulgaria									454	491
Cyprus				2.148	2.300	2.562	2.996	3.112	3.324	3.496
Czech Rep.			1.054	1.168	1.312	1.582	1.602	1.669	1.874	2.064
Denmark	5.867	6.252	9.147	9.384	9.775	10.205	10.800	11.201	11.570	11.764
Estonia				623	664	725	808	933	1.043	1.209
Finland	5.427	5.938	6.235	6.403	6.714	7.097	7.427	7.761	8.005	8.317
France	4.594	4.804	6.779	6.990	7.240	7.631	7.946	8.320	8.622	8.908
Germany	4.745	4.724	7.162	7.349	7.548	7.808	7.975	7.974	8.070	8.088
Greece	1.492	1.536	2.758	2.967	3.250	3.420	3.671	3.956	4.320	4.632
Hungary			913	983	1.125	1.417	1.556	1.689	1.927	1.989
Ireland	1.956	2.139	3.518	3.835	4.502	5.791	6.259	6.649	7.078	7.584
Italy	3.781	4.166	4.913	5.169	5.467	5.735	5.983	6.216	6.420	6.689
Latvia			492	547	566	590	591	624	699	859
Lithuania			477	559	574	610	646	701	802	936
Luxembourg	4.890	5.517	9.455	9.876	10.673	11.602	12.660	13.358	14.122	14.672
Malta			1.720	1.845	1.945	2.022	2.021	2.091	2.179	2.271
Netherlands	4.835	5.068	6.614	6.923	7.392	7.942	8.307	8.550	8.765	9.683
Poland				950	1.164	1.159	1.054	1.075	1.262	1.373
Portugal	917	1.129	2.399	2.599	2.857	3.091	3.192	3.390	3.589	3.724
Romania				238	267	298	305	423	523	632
Slovak Rep.			717	793	830	921	996	1.089	1.192	1.316
Slovenia			2.516	2.613	2.794	3.001	3.060	3.173	3.306	3.517
Spain	2.045	2.391	2.873	3.175	3.343	3.593	3.845	4.074	4.409	4.652
Sweden			8.447	9.053	8.692	9.341	10.011	10.233	10.286	10.589
United Kingdom	3.125	3.749	6.183	7.185	7.459	7.410	7.116	7.658	7.999	8.429
Norway	5.643	6.092	9.010	9.911	10.753	11.699	11.875	11.744	12.521	13.004
Switzerland	5.455	6.019	9.622	10.161	10.889	11.573	11.417	11.585	11.769	11.762

Source: Eurostat, Luxembourg (2009). <http://epp.eurostat.ec.europa.eu>, Online Database.

TABLE B: PUBLIC SOCIAL EXPENDITURE (% OF GDP): ACTIVE LABOUR MARKET POLICY (1980 – 2005)

	1980	1981	1990	1991	1999	2000	2001	2002	2003	2004	2005
Austria			0,3	0,3	0,5	0,5	0,5	0,5	0,6	0,6	0,6
Belgium			1,0	1,0	1,2	1,0	1,1	1,0	1,1	1,1	1,0
Czech Republic				0,1	0,1	0,1	0,1	0,1	0,1	0,2	0,2
Denmark			0,7	0,8	1,9	2,0	1,8	2,0	1,9	1,8	1,7
Finland	0,7	0,7	0,8	1,1	1,0	0,8	0,8	0,8	0,8	0,9	0,8
France			0,7	0,8	1,2	1,1	1,1	1,1	1,0	0,9	0,8
Germany			0,8	1,1	1,2	1,1	1,1	1,2	1,2	1,1	0,9
Greece			0,1	0,2	0,2	0,2	0,2	0,1	0,0	0,1	0,0
Hungary					0,3	0,3	0,4	0,5	0,3	0,3	0,2
Ireland			1,0	0,9	1,0	0,9	0,8	0,7	0,7	0,6	0,6
Italy			0,2	0,3	0,5	0,5	0,6	0,7	0,7	0,6	0,5
Luxembourg	0,2	0,7	0,2	0,1	0,1	0,1	0,2	0,2	0,4	0,4	0,5
Netherlands	0,5	0,5	1,2	1,2	1,5	1,5	1,5	1,5	1,5	1,3	1,3
Poland			0,1	0,1	0,3	0,2	0,2	0,2	0,4	0,3	0,4
Portugal			0,4	0,5	0,5	0,6	0,6	0,5	0,6	0,6	0,6
Slovak Republic				0,2	0,2	0,3	0,3	0,4	0,2	0,1	0,3
Spain	0,1	0,2	0,7	0,6	0,6	0,6	0,6	0,6	0,6	0,7	0,7
Sweden			1,6	2,2	2,2	1,7	1,6	1,5	1,2	1,2	1,2
United Kingdom	0,5	0,5	0,5	0,5	0,3	0,3	0,4	0,3	0,5	0,5	0,5
Norway			0,8	0,9	0,6	0,6	0,6	0,6	0,7	0,7	0,7
Switzerland			0,2	0,2	0,7	0,5	0,5	0,5	0,7	0,7	0,7
Turkey			0,0	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
Australia			0,2	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3
Canada			0,4	0,5	0,4	0,3	0,3	0,3	0,3	0,3	0,2
Japan			0,3	0,3	0,2	0,2	0,2	0,2	0,3	0,2	0,2
New Zealand	0,5	0,6	0,8	0,8	0,5	0,4	0,4	0,4	0,4	0,4	0,3
United States			0,2	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1

Sources: OECD Database (http://stats.oecd.org/wbos/default.aspx?datasetcode=SOCX_AGG), accessed 15 October 2009.

**TABLE C: SOCIAL BENEFITS FOR SICKNESS/HEALTH AS A PERCENTAGE
OF TOTAL BENEFITS (1990 – 2006)**

	1990	2000	2001	2002	2003	2004	2005	2006
Austria	26,1	25,6	25,6	25,5	25,0	25,2	25,5	25,5
Belgium	26,2	24,2	24,2	23,5	26,7	27,4	27,1	25,7
Bulgaria							29,0	26,0
Cyprus		27,2	26,6	25,3	26,0	23,8	25,0	25,7
Czech Republic		33,6	34,3	35,0	35,5	35,3	35,3	34,4
Denmark	20,0	20,2	20,3	20,9	20,5	20,6	20,7	21,6
Estonia		32,1	31,9	31,1	31,8	31,5	31,9	31,2
Finland	28,5	23,8	24,5	24,8	25,1	25,5	25,9	26,2
France	28,3	28,8	29,1	29,4	29,7	30,0	29,8	29,9
Germany	31,8	29,5	29,6	29,1	28,9	28,1	28,4	29,1
Greece	24,8	26,5	25,8	26,2	26,5	26,5	27,8	28,7
Hungary		27,9	27,6	27,9	29,7	29,5	29,9	29,0
Ireland	33,9	41,4	42,7	39,1	39,5	40,2	40,9	41,1
Italy	27,8	25,1	26,1	25,4	25,1	26,1	26,7	26,8
Latvia		16,7	19,4	19,8	23,2	24,4	26,0	29,1
Lithuania		29,8	30,1	30,0	29,8	29,3	30,3	32,1
Luxembourg	25,6	25,4	25,6	25,6	25,0	25,3	25,7	25,4
Malta		29,3	29,1	28,0	28,9	29,8	29,4	28,4
Netherlands	28,3	29,3	30,4	30,7	31,1	30,5	30,7	31,8
Poland		19,6	19,3	20,4	20,0	19,4	19,8	20,4
Portugal	35,5	32,0	31,3	30,9	28,8	30,5	30,1	29,2
Romania		25,6	26,3	25,9	27,0	36,0	36,2	34,8
Slovak Republic		34,9	35,0	34,2	32,7	29,9	29,6	31,0
Slovenia		30,7	31,4	31,3	32,4	32,2	32,3	32,1
Spain	28,8	29,4	29,7	29,9	30,7	31,0	30,9	31,2
Sweden		27,0	28,0	28,4	27,7	26,5	25,9	26,0
United Kingdom	24,2	25,5	27,6	28,5	29,9	30,5	30,9	31,8
Norway	30,3	34,2	34,5	34,2	34,4	33,0	32,0	32,6
Switzerland	28,5	25,1	25,9	26,6	26,2	26,0	26,4	26,4

Source: Eurostat, Database (2009)

TABLE D: SOCIAL BENEFITS FOR DISABILITY AS A PERCENTAGE OF TOTAL BENEFITS (1990 – 2006)

	1990	2000	2001	2002	2003	2004	2005	2006
Austria	9,9	9,7	9,4	9,1	9,0	8,8	8,6	8,2
Belgium	7,4	9,3	9,2	9,8	7,1	7,1	7,0	6,4
Bulgaria							8,4	9,1
Cyprus		3,4	3,8	3,9	3,7	4,2	3,7	3,9
Czech Republic		7,7	8,0	7,8	8,1	7,9	7,8	8,6
Denmark	10,0	12,0	12,5	12,9	13,5	13,9	14,4	14,9
Estonia		6,6	8,2	8,9	9,3	9,1	9,4	9,5
Finland	15,5	13,9	13,7	13,4	13,3	13,2	12,9	12,7
France	6,4	5,9	5,9	6,0	5,9	5,9	5,9	6,1
Germany	6,2	6,5	6,3	6,2	6,2	6,2	6,2	6,2
Greece	6,9	4,8	5,0	5,2	5,1	5,0	4,9	4,7
Hungary		9,6	10,2	10,1	10,3	10,3	9,9	9,6
Ireland	4,5	5,3	5,2	4,7	4,8	5,0	5,3	5,4
Italy	7,4	6,1	5,8	6,2	6,3	6,1	6,0	5,9
Latvia		7,9	7,9	7,9	7,5	7,9	7,5	7,3
Lithuania		8,4	8,9	9,1	9,6	10,3	10,4	10,7
Luxembourg	12,8	13,4	14,3	13,8	13,3	13,5	13,1	13,2
Malta		5,9	5,8	5,9	6,5	6,7	6,6	6,3
Netherlands	16,5	11,8	11,5	11,2	11,0	10,6	9,7	8,5
Poland		14,0	13,7	12,8	12,2	11,5	10,7	9,3
Portugal	15,4	12,7	12,3	11,7	11,5	10,4	10,0	10,0
Romania		7,9	9,0	8,6	9,9	7,1	6,8	7,4
Slovak Republic		7,6	8,1	8,8	8,9	7,9	8,1	8,7
Slovenia		9,0	8,7	8,6	8,3	8,2	8,5	8,5
Spain	7,7	7,9	7,7	7,7	7,4	7,4	7,5	7,3
Sweden		13,0	13,2	13,6	13,9	14,6	15,0	14,9
United Kingdom	8,9	9,4	9,3	9,6	9,4	9,3	8,9	8,7
Norway	15,9	16,4	16,5	17,6	17,9	18,7	19,1	18,8
Switzerland	9,7	11,7	12,2	12,4	12,7	12,6	12,7	12,5

Source: Eurostat Database (2009)

**TABLE E: SOCIAL BENEFITS FOR SOCIAL EXCLUSION NOT ELSEWHERE
CLASSIFIED (1990 – 2006)**

	1990	2000	2001	2002	2003	2004	2005	2006
Austria	1,2	0,7	0,9	1,0	0,9	1,0	1,0	1,1
Belgium	2,0	1,7	1,6	1,8	1,6	1,6	1,6	1,6
Bulgaria							2,7	2,5
Cyprus		4,0	4,1	5,1	4,5	4,4	4,4	4,7
Czech Republic		2,7	2,7	2,7	2,9	2,8	2,6	2,7
Denmark	3,6	3,7	3,7	3,6	3,4	3,5	3,4	3,0
Estonia		2,0	2,3	2,0	1,6	1,1	1,0	0,7
Finland	1,9	2,0	2,1	2,1	2,1	2,0	2,0	2,2
France	0,8	1,5	1,5	1,5	1,5	1,5	1,6	1,6
Germany	2,1	0,5	0,5	0,5	0,6	0,7	0,6	0,6
Greece	1,0	2,2	2,3	2,3	2,3	2,4	2,3	2,3
Hungary		0,9	1,0	1,0	0,6	0,7	0,7	0,6
Ireland	1,6	2,1	2,0	2,1	2,3	2,2	2,0	2,1
Italy	0,1	0,1	0,2	0,2	0,3	0,2	0,2	0,2
Latvia		0,7	0,7	0,8	0,9	1,2	1,0	0,8
Lithuania		3,4	3,2	3,4	3,3	2,6	1,8	1,6
Luxembourg	1,1	0,9	2,2	2,1	2,2	2,2	2,0	2,1
Malta		1,3	1,2	1,1	1,3	1,4	1,6	1,8
Netherlands	2,8	5,3	5,4	5,1	4,9	4,6	4,7	6,1
Poland		0,6	0,7	0,8	0,8	0,8	1,8	1,2
Portugal	0,3	1,4	1,3	1,6	1,5	1,0	1,0	1,1
Romania		0,4	0,4	2,3	2,6	4,2	2,2	1,2
Slovak Republic		6,2	6,4	5,9	4,5	3,1	3,2	3,6
Slovenia		1,6	1,8	2,0	2,6	2,8	2,8	2,4
Spain	0,4	0,6	0,7	0,9	0,8	0,8	1,2	1,2
Sweden		2,3	2,2	2,1	2,1	2,0	1,9	1,9
United Kingdom	0,8	0,7	0,9	0,9	0,8	0,8	0,7	0,7
Norway	3,5	2,6	2,5	2,6	2,6	2,9	2,8	2,8
Switzerland	2,3	3,0	2,5	2,5	2,7	2,8	2,8	2,9

Source: Eurostat Database (2009)

TABLE F: PUBLIC SOCIAL EXPENDITURE BY BROAD SOCIAL POLICY AREA AS A PERCENTAGE OF NNI (2005)

	Pensions (old age and survivors)	Income support to the working age population	Health	All social services except health	Public social expenditure	Total CASH	Total Services	Active Labour Market Programmes
Sweden (33.6)	8,8	7,8	7,7	7,8	33,6	16,5	15,6	1,5
France (33.2)	14,0	5,8	8,9	3,3	33,2	19,9	12,3	1,0
Luxembourg (32.2)	10,0	9,3	9,7	2,5	32,2	19,3	12,2	0,7
Austria (32.1)	14,9	6,8	8,1	1,6	32,1	21,7	9,7	0,7
Denmark (31.5)	6,4	9,6	6,9	6,7	31,5	15,9	13,5	2,0
Germany (31.1)	13,2	5,2	8,9	2,6	31,1	18,5	11,5	1,1
Belgium (31)	10,6	8,5	8,6	2,0	31,0	19,1	10,7	1,3
Finland (30.5)	9,9	8,0	7,3	4,4	30,5	17,8	11,6	1,0
Italy (29.7)	16,6	3,2	8,1	1,1	29,7	19,8	9,2	0,7
Hungary (28.4)	10,7	6,4	7,6	3,3	28,4	17,1	10,9	0,4
Portugal (28.2)	12,5	5,3	8,8	0,8	28,2	17,8	9,5	0,8
Spain (25.5)	9,7	6,0	7,0	1,8	25,5	15,7	8,9	0,9
Czech Republic (25.5)	9,5	5,4	8,2	2,0	25,5	14,9	10,2	0,3
Poland (25.1)	13,6	5,1	5,1	0,7	25,1	18,7	5,8	0,5
Norway (24.6)	5,5	6,8	6,6	4,9	24,6	12,3	11,4	0,8
OECD-30 (24.4)	8,5	5,3	7,3	2,6	24,4	13,8	9,9	0,7
Netherlands (24.3)	5,8	7,1	6,9	3,0	24,3	12,9	9,9	1,6
Greece (23.6)	13,2	2,2	6,5	1,6	23,6	15,4	8,1	0,1
New Zealand (23.5)	5,5	6,8	8,7	1,9	23,5	12,3	10,7	0,5
United Kingdom (23.3)	6,2	5,0	7,7	3,8	23,3	11,2	11,5	0,6
Japan (22.9)	10,7	1,9	7,8	2,2	22,9	12,6	10,0	0,3
Ireland (22.5)	4,6	6,7	8,7	1,7	22,5	11,2	10,4	0,9
Switzerland (22.2)	7,4	5,5	6,6	1,8	22,2	12,9	8,5	0,8
Slovak Republic (21.3)	8,0	5,1	6,8	1,0	21,3	13,1	7,8	0,4
Australia (21.2)	4,3	5,7	7,3	3,4	21,2	10,0	10,7	0,5
Iceland (19.9)	2,3	4,4	7,4	5,6	19,9	6,7	13,1	0,1
Canada (19.3)	4,8	3,1	8,0	3,0	19,3	7,9	11,0	0,3
United States (18.1)	6,8	2,2	7,9	1,0	18,1	9,0	8,9	0,1

Source: OECD, database (www.oecd.org/els/social/expenditure)

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FETA CHEESE PACKAGING DESIGNS USING ADVANCED CAD/CAM SYSTEMS

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ABSTRACT

Feta is a traditional Greek cheese. Although, it is one of the most famous products of Greece and in a number of cases, synonym to the Greek food quality, its packaging is very simple, in terms of geometry and its promotion is based on label design and graphics. Taking advantage of the principles of industrial design engineering and the use of advanced CAD/CAM systems, the present research aims to propose a number of different innovative packaging designs for this product. These designs can be used for both the everyday consumption as well as the feta cheese touristic promotion. The proposals are expected to offer a further added value to the already world known feta cheese and increase its sales. At the same time, the product could be clearly distinguished from other types of white cheese available in the market that compete with the original feta cheese.

Keywords: Feta Cheese Packaging; Package Design; CAD/CAM (Computer Aided Design/Computer Aided Manufacturing); Industrial Design Engineering.

1. INTRODUCTION

Since 2002, feta cheese has been a protected designation of origin product. According to the relevant EU legislation, only those cheeses produced in a traditional way in some areas of Greece and made from sheep's milk or from a mixture of sheep and goat milk (up to 30%), may be named "feta". The term "feta" in Greek means "slice", which is based on the way that feta cheese is cut to be served as a starter.

The importance of packaging hardly needs stressing, as only a handful of food products are sold in bulk nowadays (Robertson, 2010). Under certain circumstances, a product's packaging may be a vital factor in consumer decision making, because it allows consumers to draw inferences about the product, its attributes, or (in the case of foods and beverages) its taste (Becker et al., 2011).

It is a fact that around 25% of the ex-factory cost of consumer foods is for packaging. As a result it provides the incentive and the challenge for food packaging technologists to design and develop functional packages at minimum cost (Underwood and Klein, 2002). Providing adequate protection to the products, without over packing

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them, they remain acceptable throughout their lifecycle. This is a demanding process that requires in depth knowledge of both the food and the packaging and how those two interact to achieve the desired shelf life (Noyelle, 2010, Bramston, 2009).

Not long ago, feta was sold in bulk. This is not the case anymore and the smaller packages, such as vacuum packs and plastic containers with brine, emerged and have changed the way that feta cheese is sold. Although this was a positive move, the packaging of feta is still not appealing to many consumer groups. The packages that appeared in the market have been adopted by the vast majority of the producers, but are still rather unattractive, in terms of geometry. In addition, their promotion is based on label design and graphics (Figure 1).

Considering the significance of the product for the Greek market and its global appeal, a series of packaging designs are proposed. These new packaging designs are completely different than the ones already in use and provide increased added value and validity to the feta cheese producers that potentially would adopt them. All of the new packaging proposals are presented together with their conceptual analyses, in order to be clear where each inspiration came from.

FIGURE 1: THREE OF THE MOST COMMON PACKAGES FOR FETA CHEESE

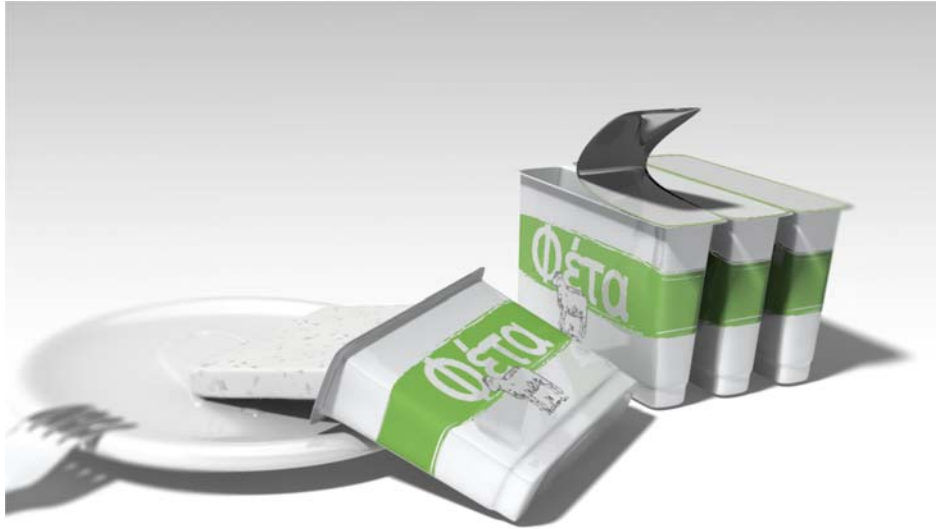


2. "SLICE": A PACKAGE TOWARDS A HEALTHIER ATTITUDE

The concept of the sliced feta cheese comes to materialize consumer needs that the current packaging designs do not fulfill. This package is divided into four slices, thus its shape refers to the name of the cheese ('feta' means slice in Greek). It is a concept

that targets a group of consumers that are health conscious. Every slice of the package has a cap, made of aluminum foil that is airtight and prevents the insertion of air that is the main factor of the product's deterioration (Figure 2).

FIGURE 2: A CAD BASED RENDERED IMAGE OF THE PACKAGE AND THE FETA CHEESE SERVED ON A PLATE



Once an ordinary feta package is opened, it is a matter of few days for the contaminating processes to start, especially when the package does not contain brine, which leads the cheese to deteriorate even faster. The principal function of the “Slice” package is to protect and preserve the cheese from external contamination. The presence of oxygen in a package can trigger or accelerate oxidative reactions that result in food deterioration (oxygen facilitates the growth of aerobic microbes and molds). Oxidative reactions result in adverse qualities such as off-odors, off-flavors, undesirable color changes, and reduced nutritional value (Brody et al., 2008).

The slices of the package can easily be detached so that the consumer can take a portion and leave untouched, the rest of the cheese for later consumption. It is a package that makes possible the gradual consumption of feta cheese, prolonging the time that can be stored, in a refrigerator, since the product does not come in contact with air (the main factor of deterioration) until the time of the consumption.

It would also be possible, by using this package, to lower the content of salt in the product, since salt is primarily used as a preservative in feta, and not only as a taste enhancer. There are competitive products in the market containing less salt, than feta

cheese. The possibility of reducing the salt content without lowering the shelf-life of the product is an area of research that needs further investigation.

It is a packaging concept that targets a group of consumers that are health conscious, since it is well known that, excessive consumption of salt and saturated fat has been linked to health problems in the general population (high blood pressure and elevated cholesterol levels). Attempts to reduce NaCl in Feta cheese have already been made by the industry and the scientific community (Katsiari et al., 2000). This concept attempts to make a further step towards this goal from the industrial design point of view.

Furthermore, the proposed combination of two “slices” packages in a paper sleeve, which reminds of Greek yogurt-like packages, is a concept that targets younger consumers and those that do not consume large amount of feta cheese and would prefer a smaller package that meets their needs (Figure 3).

FIGURE 3: A NEW YOGURT-LIKE VERSION OF THE “SLICE” PACKAGE



3. PACKAGE FOR TOURISTIC PROMOTION

The proposed package combines the feta cheese with olive oil and oregano or thyme (a combination that is a tradition in Greece). Oregano and thyme, herbs with a strong flavor, also have antibacterial activity, when combined with feta cheese (Govaris et al., 2011). Olive oil is an ingredient that the consumers prefer for its taste, flavor and the health benefits.

It is a package that offers the opportunity to the non-native consumer to taste these ingredients, as the Greek tradition requires (Figure 4). Thus it increases the possibility

for the consumer to be satisfied by the taste of the product and prefer it again in the future. As a result, the producers can aim at higher sales, which will increase their capacity for further investments.

In this package, the main body of a rather ordinary feta cheese container is extended, to make an olive shaped sheath, which contains the extra virgin olive oil together with oregano or thyme and is air-tight closed with aluminum foil. The fact that the ingredients are offered in separate containers, emphasizes the increased quality of both the products, while at the same time the consumer has the opportunity to serve the cheese by him/herself. The promotion of such a product is expected to be very successful not only in Mediterranean countries, but all over the world too, since it promotes a very healthy way of life, which is well known globally.

FIGURE 4: DOUBLE PACKAGE FOR FETA CHEESE AND OLIVE OIL



4. PACKAGE FOR DELICATESSEN STORES

It is a folded carton, containing a plastic vacuum package of feta cheese (Figure 5). The proposed package is smaller, than those which can be found in a super market and is intended to be sold in organic food stores or delicatessen. On the front panel, an artistic black and white image of some ewes, makes the package more attractive and indicates the origin of the cheese. This specific concept is based on traditional label design easy to be implemented. In the middle of the front panel, for instance, an opening can be seen, framed by a hot foil stamp finishing, a characteristic that could be easily manufactured. This detail differentiates the package even more and the consumer is given the feeling of acquiring a product of a superior quality.

FIGURE 5: FETA CHEESE PACKAGE FOR DELICATESSEN STORES



5. PACKAGES MADE FOR PRESENTS

5.1. Wooden barrel-like package

It's a package that needs little explanation. It is a miniature of a wooden barrel. The metallic finishing labels and the printed wooden texture, add to the package visual impact, so that a simple product like feta cheese can be offered as a present (Figure 6). This proposal is inspired by the barrel feta cheese which, with no doubt, is an exceptional traditional product of higher quality.

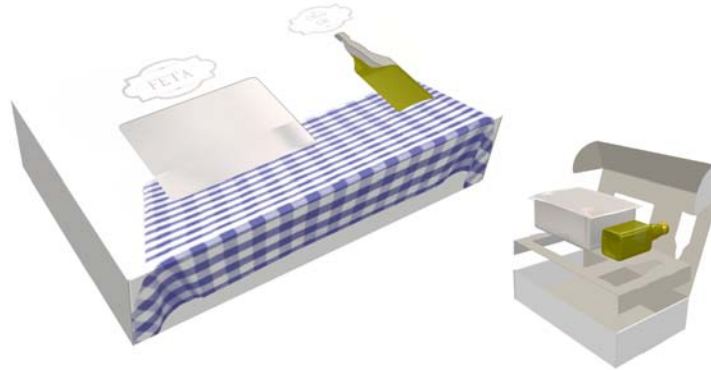
5.2. Feta cheese and olive oil packaged together

This box contains two products: feta cheese and extra virgin olive oil in a bottle. On the top, two openings allow the consumer to see its content. On the label, a table reminds of a homemade product (Figure 7). The two Greek products, the colors and a rather usual table cloth pattern, make this package a perfect candidate for a souvenir or a present from Greece. In the inside, a paper-frame supports the two products in order to be easily transferred, without the risk of being damaged.

FIGURE 6: BARREL-LIKE FETA CHEESE PACKAGE



FIGURE 7: FOLDED CARTON FOR FETA CHEESE AND OLIVE OIL BOTTLE



5.3 Feta cheese block package

This package is intended to be offered as a present. It is a package that resembles a block of feta cheese and contains two pieces of feta in traditional vacuum packs (Figure 8). On its surface there is an embossed pattern of round glossy cheese holes in order to attract the attention. On the front, a hot foil stamp provides information about the content, for the purpose of promoting the design concept. On the back, there is an emboss similar to those that can be found on feta cheese blocks, sold in bulk, that traditionally have the stamp of the producer. It's perfectly rectangular shape, takes advantage of the space and can be easily stacked in order to be transported on pallets.

FIGURE 8: FETA CHEESE BLOCK PACKAGE



6. CONCLUSIONS

The proposed packaging designs stress feta's name, origin and can be used for both everyday consumption and overseas promotion. These proposals are expected to offer a further added value to the already world known feta cheese, increase its sales and result in higher income for Greek feta cheese producers. At the same time, the product could be clearly distinguished from the other types of white cheese in the market, which often compete with the original feta cheese.

The advanced technology of the available CAD/CAM systems, minimize the need for physical prototypes. It is possible to develop and replicate virtually different packages, just as they are in reality. Therefore these images can be used to promote the proposed packages and minimize the time-to-market. Undoubtedly industrial design engineering can help create more competitive products that will stand out in the crowd and will appeal to a wider consumer public. At the same time, it can help towards the standardization of agricultural products, which in turn will lead to a potential increase in the producers' income.

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OPTIMIZATION OF AUTOMATIC STORAGE SYSTEM CONTROLLED BY PLC AND SCADA USING GENETIC ALGORITHMS

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ABSTRACT

Industrial process measurement and control systems are used in many industrial sectors in order to achieve production improvement and process optimization, while at the same time reduce production time and costs. Integration, flexibility and optimization are the key factors to a rapidly changing and competitive market. In order to achieve these goals, optimized systems have to be built. This paper proposes an intelligent storage system, which optimizes the storing process by deciding the optimum slot that an object will occupy in a warehouse. Depending on the weight, each object has to be stored in a different space. Genetic algorithms are used in order to optimise the allocation of storage slots at the shortest time. The duration of storage is monitored and used as feedback to the system so as to optimize the algorithm. Key role to the successful implementation is the aforementioned feedback, which is gathered by a PLC and transferred via an OPC server to the application in order to update the corresponding table of values. Using feedback, any delay of the system is taken into account, so that the operation error is introduced in the application which, in turn, is trained to improve its operation in the next loop. Using the proposed framework, the required time to optimize the placement of objects in specific warehouse slots is greatly improved.

Keywords: Genetic Algorithms; PLC; SCADA; Optimization; Storage System.

1. INTRODUCTION

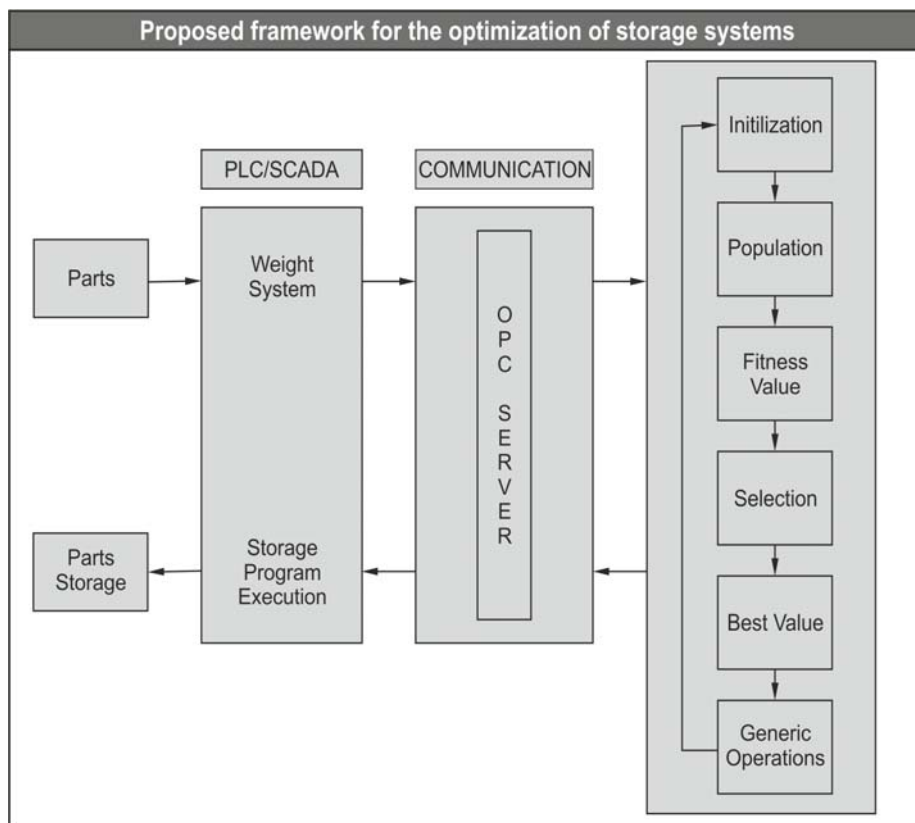
In the present paper, an intelligent storage system is described, which can optimize the storing process, deciding about the optimum position an object will occupy in a warehouse or storing slot. Depending on the weight, each object will be placed to a different storage slot. Genetic algorithms (GA) are used in order to secure that the optimum storing positions -at the least possible time- will be found for a set of storing objects. The duration of storage is monitored and used as feedback to the system so as the algorithm gets improved at each step. The system will be controlled by PLC (programmable logic controller), and the data monitoring and acquisition will be accomplished using a SCADA (Supervisory Control and Data Acquisition) software.

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The software used to implement the genetic algorithm is developed using Visual Basic™ (VB™). It will be loaded with information concerning the weight of objects to be stored. Using the data table stored in the PLC as well as the database of the application, the genetic algorithm will be executed and output the slots where each object will be stored, taking into account the time needed. The objects' weight (as an influencing variable) will be measured by a PLC, which will use a load cell to weigh the objects to be placed, and it will store the corresponding values to the appropriate tables. The algorithm will output the most suitable slot each item will occupy. This output is implemented by a PLC, while at the same time, the time needed to perform the operation is measured, and this data is used as feedback to the genetic algorithm. The system will be supported by a SCADA application used to monitor the PLC as well as to visualise the procedures via simulation (Figure 1).

FIGURE 1: FRAMEWORK FOR OPTIMIZATION OF STORAGE SYSTEMS



2. GENETIC ALGORITHMS

A genetic algorithm is an 'intelligent' probabilistic search algorithm that simulates the process of evolution by taking a population of solutions and applying genetic operators in each reproduction. Each solution in the population is evaluated according to some fitness measure. Fitter solutions in the population are used for reproduction. New 'offspring' solutions are generated and unfit solutions in the population are replaced. The cycle of evaluation-selection-reproduction is continued until a satisfactory solution is found (Goldberg, 1989; Michalewicz, 1995). Holland (1975) introduced genetic algorithms which, later on, were applied to a wide variety of problems (Mitchell, 1999).

Holland (1975) first described a GA, which is commonly called the Simple Genetic Algorithm (SGA). Tiwari and Vidyarthi (2000) describe the way that SGA works:

Step 1: Generate the initial population. Determine the size of the population and the maximum number of the generation.

Step 2: Calculate the fitness value of each member of the initial population.

Step 3: Calculate the selection probability of each member of the initial population using the ratio of fitness value of that initial population to the summation of the fitness values of the individual solutions.

Step 4: Select a pair of members (parents) that can be used for reproduction using selection probability.

Step 5: Apply the genetic operators such as crossover, mutation, and inversion to the parents. Replace the parents with the new offspring to form a new population. Check the size of the new population. If it is equal to the initial population size, then go to step 6, otherwise go to step 4.

Step 6: If the current generation is equal to the maximum number of the generation then stop, else move to step 2.

According to the aforementioned outline, the following points should be taken into account while applying the GA to any problem:

- representation of structure;
- initial population;
- population size;
- selection probability;
- genetic operators; and
- termination.

The objective is to define the terminologies, and to discuss the various design issues (e.g. representation, initialization, evaluation function, crossover, mutation, elitist strategies etc) related to a genetic algorithm with reference to its application in solving the problem (Gen and Cheng, 1997).

A genetic algorithm starts with an initial population of individuals (also known as chromosomes or strings) representing different possible solutions to a problem. The population is maintained by the iterations of the algorithm, termed as the generation. The fitness of each individual is evaluated in each generation and the individual is stochastically selected for a next generation, based upon its fitness (Kumar et al., 2006). New individuals (offspring) are produced by the two genetic operators (crossover and mutation). It is assumed that the off springs inherit the good attributes from their parents in order that the average quality of the solution becomes of a better quality than that in the previous population (Haupt and Haupt, 2004). This evolutionary process terminates when the specified stopping criteria are met. The main advantage of a GA is the flexibility to adopt itself to continuously changing optimization criteria and constraints. Factors such as representation of individuals, decoding methods, initial population, the selection scheme and the choice of genetic operators, have a great deal of influence on the performance of the genetic algorithm itself (Tiwari et al., 1997).

3. PROGRAMMABLE LOGIC CONTROLLER

A programmable logic controller, also called a PLC or programmable controller, is a computer-type device used to control equipment in an industrial environment. The kind of equipment that PLCs can control varies to a great extent, because the industrial facilities and their needs are different. Conveyor systems, food processing machinery, auto assembly lines etc, are only some examples that PLCs are used for their control. In a traditional industrial control system, all control devices are wired directly to each other, with respect to their operation guidelines. In a PLC based system, the PLC replaces the wiring between the devices and instead of them being wired directly to each other, all equipments are directly wired to the PLC. In the end, the control program that resides in the PLC itself, provides the “wiring” connection between the devices (Rabiee, 2009).

The control program is the computer program stored in the PLC’s memory that instructs the PLC how to control a specific system (Petruzella, 2010). The use of a PLC, in order to provide the wiring connections between system devices, is called soft-wiring. The soft-wiring advantage provided by programmable controllers is of a great deal and stresses the importance of the PLCs themselves (Bolton, 2009). Soft-wiring is able to make changes in the control system in an easy and low cost manner. If there is a need for a device, which is already controlled by a PLC system, to operate in a different way or to be controlled using another strategy, all it needs to be done is to change the control program. In a traditional system, making this type of change, would involve physically changing the wiring between the devices, which by itself is a costly and time-consuming task.

Programmable controllers are now a mature technology, offering many more capabilities than ever anticipated. They are capable of communicating with other control systems, providing production reports, scheduling production, and diagnosing their own failures and those of the equipment or process they control. These enhancements have made them important contributors in meeting today's demands for higher quality and productivity. Despite the fact that they have become more sophisticated, they still retain the simplicity and ease of operation that was intended in their original design (Malik et al, 2010).

New advances in PLC technology include features such as better operator interfaces, graphic user interfaces (GUIs), and more human-oriented man/machine interfaces (Hsieh and Hoermann, 2009). They also include the development of interfaces that allow communication with equipment, hardware, and software that supports artificial intelligence, such as fuzzy logic I/O systems (Cao and Meng, 2010). Software advances provide better connections between different types of equipment, using communication standards through widely used networks. New PLC instructions are developed out of the need to add intelligence to a controller. Knowledge-based and process learning-type instructions may be introduced to enhance the capabilities of a system (Bayindir, 2011).

4. SUPERVISORY CONTROL AND DATA ACQUISITION

SCADA is an acronym that stands for Supervisory Control and Data Acquisition. It refers to a system that collects data from various sensors at a factory, plant or in other remote locations, and then sends this data to a central computer, which then manages and controls the data. In modern manufacturing and industrial processes, mining industries, public and private utilities, leisure and security industries, telemetry is often needed to connect equipment and systems separated by large distances. This can range from a few meters to thousands of kilometres. Telemetry is used to send commands, programs, and to receive monitoring information from these remote locations. SCADA refers to the combination of telemetry and data acquisition. It encompasses the collecting of the information, transferring it back to the central site, carrying out any necessary analysis and control and then displaying that information on a number of operator displays. The required control actions are then conveyed back to the process (Bailey and Wright, 2003).

OPC (OLE™ for Process Control) is a standardized interface for accessing process data. It is based on the Microsoft™ COM/DCOM standard and has been expanded according to the requirements when accessing data in the field of automation. Here, it is primarily used to read/write values from/to the controller. Typically, OPC clients are visualizations for the acquisition of operating data (ABB, 2005; Moxa Networking, 2004), and OPC servers are usually provided for PLC systems and field

bus cards. The OPC Automation interface is intended for use by applications such as VB™, Delphi™ and Excel™ script based programs.

5. CASE STUDY USING THE GA BASED OPTIMISATION FRAMEWORK

A storage system with eight (8) slots and eight objects to be placed in these slots were used. Depending on its weight, every object will be placed in a specific position, so as the final placing time of all the objects is the shortest possible. Once each object is placed, the time-elapsed table is updated with the actual time needed for the placement (Figure 2). The latter is used as feedback input for the next step of the GA.

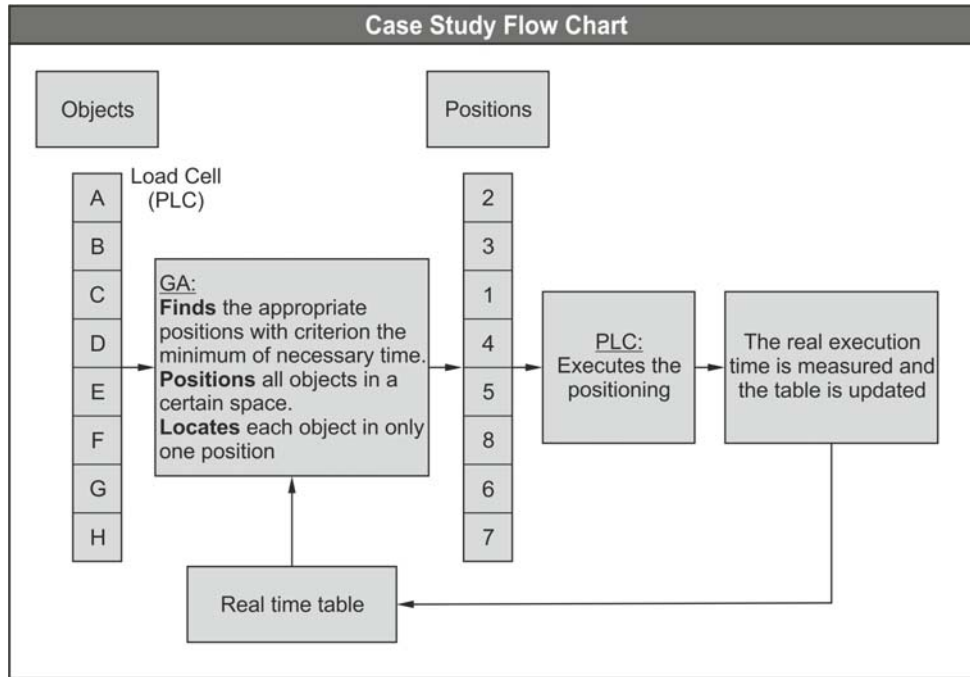
FIGURE 1: DATA TABLE FOR GA APPLICATION

	1	2	3	4	5	6	7	8	9	10
1	1,2	1,3	1,4	1,5	1,5	1,7	1,8	1,9	2,0	2,1
2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2
3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3
4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4
5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5
6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5	2,6
7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5	2,6	2,7
8	1,9	2,0	2,1	2,2	2,3		2,5	2,6	2,7	2,8

The first step has to do with the use of the genetic algorithm. The genetic algorithm approach has been used because the vast amount of the necessary variables make the solution impossible using classical heuristic methods (Mukhpadhyay et al., 1992). Before each object is placed in the storing slot, it is automatically weighed using a load cell, and the value is stored in a temporary memory in order to be used later on.

The weight data, along with the object’s code, is transferred to the VB™ application and assists to the execution of the genetic algorithm. The time needed for each object, with the specific load to be placed in a specific position, is looked up in a data table (Figure 3). The necessary prerequisite is that all objects have to be placed in the specific space. The initial values of the table are the average ones and they will be corrected once the algorithm is executed, and feedback is taken into account.

FIGURE 2: CASE STUDY FLOW CHART



A genetic algorithm is used for choosing the appropriate storing position for each item, so that the overall time needed to be the shortest possible.

i = the x position of the storage system

j = the y position of the storage system

n = the number of the object

T_{ij} = duration for storing the n th object to the (i,j) position

$$\min \sum_{n=1}^8 T_{ij}, \forall i \in x, \forall j \in y$$

The steps executed in the algorithm are the following:

Once the data are encoded, the length of the chromosome is defined using 8 digits (representing the number of slots that the objects will be placed). For example, chromosome [2 3 1 5 4 8 7 6] means that the set of the eight objects -that have been previously weighted- will be placed in the storing slots with the above sequence.

Step 1: The initial population is generated, based on the assumption that the size of the population is 10 and the maximum number of the generation is 50.

Step 2: The fitness value of each member of the initial population is calculated. The fitness value is used to minimize the total time needed to place all the available objects, while making sure that each one is fit in a single slot.

Step 3: The output of the fitness value in each chromosome is stored in a temporary table.

Step 4: The two best ones are selected.

Step 5: A crossover is applied between the two chromosomes of step 4. In addition, mutation and inversion are applied on each one separately.

Step 6: The new six chromosomes created are added to the four best ones from Step 3 in order to complete the population of 10.

Step 7: Simultaneously, the best value from Step 4 is temporarily stored.

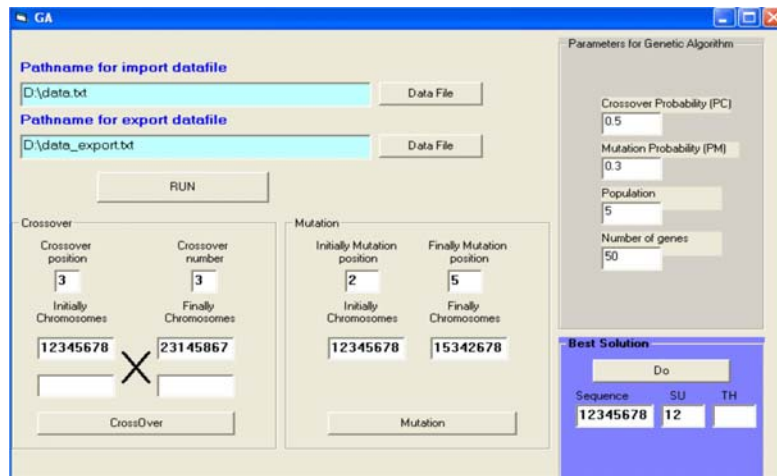
Step 8: The fitness value of each member of the initial population is calculated and the steps 3 to 6 are repeated.

Step 9: If a better value is acquired, then it replaces an old one.

Step 10: The process is repeated 50 times and the best solution is achieved (the combination of places that leads to the positioning of the available objects in the least possible time).

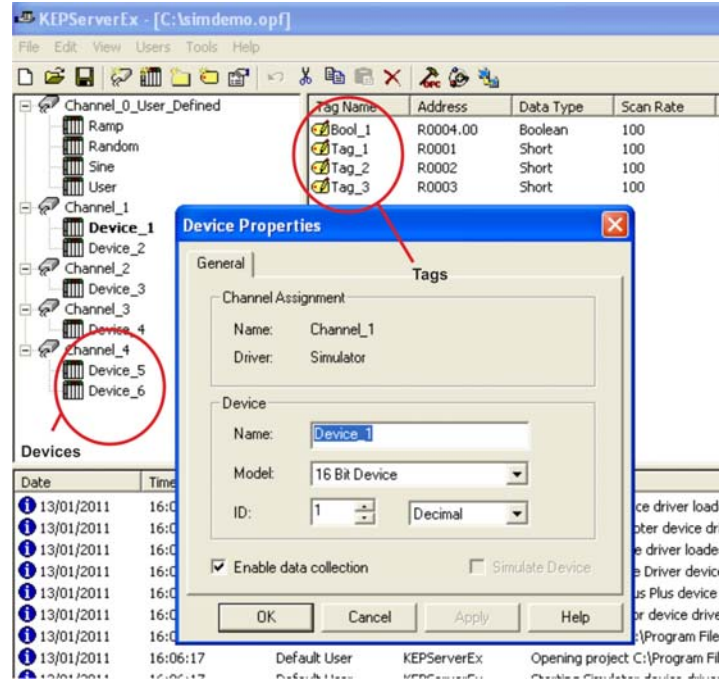
The GUI (Graphical User Interface) of the software used to execute the genetic algorithm is depicted in figure 4. The different actions of the genetic operations are presented (crossover and mutation). At the upper text fields (“Data File” button), the user can select the file pathnames for the initial data and the results. At the right hand side (dark grey area), the GA parameters used are presented on top of the final solution achieved (blue area). This solution is transferred to the PLC in order to control the system.

FIGURE 3: GENETIC ALGORITHM SOFTWARE GUI



There are several ways for sending the output to the PLC, but the most efficient one is by using an OPC server (figure 5). A number of links are created and the values are automatically transferred via the used variables to the system for execution.

FIGURE 4: OPC SERVER PARAMETER



The PLC is programmed in such a way that once the variables are downloaded, the system begins executing the movements. Thus, it places the objects to the chosen slots, according to the results from the genetic algorithm. The system's operation monitoring is executed and visualised via a SCADA application, which provides the user with the capability to monitor and interfere with the executed operation when necessary.

Figure 6 depicts the prototype that was built in order to implement the aforementioned methodology (Department of Industrial Design Engineering, TEI of West Macedonia). The prototype functions according to the specifications, and optimum times were achieved.

FIGURE 5: THE PROTOTYPE BUILT FOR IMPLEMENTING THE PROPOSED METHODOLOGY



6. CONCLUSIONS

The important issue in this application is the use of genetic algorithm and the feedback as input parameter. The actual placement times are measured by the PLC and are transferred via the OPC server to the application (GA) in order to update the table of values. Thus, any delays of the system are taken into account. This is highly important because in such a way the operation error is implemented within the system, and the system is trained to operate with it. The system minimizes the required time to optimize the objects' placement in specific places, while at the same time the information load is substantially smaller than in any other heuristic system.

An additional important factor is the use of parametric code in PLC, which facilitates the execution of a different – each time – sequence of object placement according to the output of the genetic algorithm application. The PLC code is, therefore, adjusted each time to the updated input and there is no need for the programmer to interfere with it in order to change the system's operation.

It is also important to highlight the integration made in this application between two different technologies. The data coming from an application developed in Visual Basic are automatically transferred via OPC server to PLC and they are executed directly.

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ANTIBIOTIC BIOSYNTHESIS BY STREPTOMYCES SP. 5 ISOLATED FROM CASEY STATION, ANTARCTICA

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ABSTRACT

Actinomycete culture was isolated from fellfield soil of Casey Station, Antarctica by the serial dilutions-spread plate method. The morphological, cultural, biochemical and chemotaxonomical characteristics of the strain were studied. The whole-cell hydrolysates of the strain contained galactose and LL-DAP. The results indicated that the strain 5 belongs to genus Streptomyces. Culture possesses antimicrobial activity against Gram positive bacteria and fungi. The antibiotic biosynthesis of Streptomyces sp. 5 was observed, and it was established that the maximum of biosynthesis was achieved at 120 h after formation of submerged spores. The antibiotic was isolated and its UV spectrum was checked. The data from UV assay showed that the antibiotic has absorption maxima characteristic for a polyenic heptaene. The minimal inhibitory concentrations of the antibiotic against bacteria, yeasts and fungi were determined. The antibiotic may be useful for the biological control of phytopathogenic fungi.

Keywords: Antarctica; Streptomyces Sp. 5; Polyenic Antibiotic; Minimal Inhibitory Concentration; Biological Control of Phytopathogens.

1. INTRODUCTION

Chemical fungicides have been used for the protection of crops against diseases. Their application leads to contamination of the environment, soils, waters and plants. As a result the toxic fungicide residues were detected permanently in food products. This was a reason to search alternative microbial metabolites for the biological control of the phytopathogenic fungi.

During the last years the microflora of the antarctic regions has been studied more intensively as a source of enzymes, inhibitors, biosurfactants and others (Chessa et al., 1999; Baraniecki et al., 2002; Fernandes et al., 2002; Vasileva-Tonkova and Gesheva, 2005; Bowman et al., 2005; Gesheva et al., 2010) .The researchers have noted that the actinomycetes are scarce, and try to apply different ways to isolate new actinomycetes (Boyd et al., 1966; Greenfield, 1981; Broady et al., 1987; Zdanowski and Wolglenski, 2001; De la Torre et al., 2003). However, little is known about the antagonistic properties and antibiotic production of Antarctic microorganisms and especially actinomycetes (Siebert et al., 1996; Montemartini et al., 2000; Onofri et al., 2000; Ivanova et al., 2001; Gesheva, 2009).

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The aim of this paper is to study the biological features of the actinomycete isolate from Antarctic soils, and investigate its antibiotic biosynthesis.

2. MATERIALS AND METHODS

2.1. Strain

Actinomycete strain 5 was isolated from fellfield soil of the Casey Station by serial dilutions-spread plate-method.

2.2. Growth conditions and cultivation

Actinomycete strain 5 has been cultivated in 500 ml Erlenmeyer flasks with 100 ml medium in two stages on rotary shaker, 220 rpm at 28°C. The inoculation medium (IM) contained the following components (g/L): soya meal, 10; glucose, 10; NaCl, 5; CaCO₃, 1. The seed material; in aliquot 8 % was transferred in fermentation medium (FM) with composition (g/L): soya meal, 20; glucose, 20; NaCl, 5; KH₂PO₄, 2; CaCO₃, 1. The cultivation was carried out for 5 days.

2.3. Antimicrobial assay

Antibiotic activities of cultural broth and extracts were assayed by the agar diffusion method against test cultures *Bacillus subtilis* ATCC 6633, *Escherichia coli*, *Candida utilis*, *Cladosporium cladosporioides*. Thin-layer chromatography (TLC) was carried out on silica gel 60F₂₅₄ (Merck) with available solvent systems. The bioautography was performed with test cultures *B. subtilis* ATCC 6633 and *C. utilis*. UV spectrum of the isolated antibiotic substance dissolved in methanol was determined on a Specord UV/VIS.

2.4. Taxonomical and physiological determinations

The taxonomic observations were made with classic methods. For chemotaxonomy, the strain 5 was cultivated for 5 days in 500 ml Erlenmeyer flasks with 100 ml synthetic medium with composition (g/L): starch, 20; (NH₄)₂SO₄, 6; KCl, 1; CaCO₃, 3; MgSO₄, 2.5. The biomass was harvested, divided to 2 portions: the first was hydrolysed with 1 N H₂SO₄ in boiling water for 2 hours, the second with 6 N HCl at 120°C for 1 h. The hydrolyzates were treated with the method of Berd (1973). The thin-layer chromatography (TLC) was carried out on silicagel 60F₂₅₄. The solvent system chloroform-methanol-water, 65:35:4 was used for monosaccharides. The spots were revealed by spraying with 25 % sulphuric acid in methanol and heating at 110°C for 3 min. For aminoacids, the solvent system ethanol-water, 15:1 was applied. The

spots were detected by spraying with acetic anhydride and heating at 110°C for 2 min. The standards of sugars and amino acids were used. All enzyme tests were performed by strain 5, after growth during 3 days in appropriate media, according to the standard methods (Berd, 1973).

3. RESULTS AND DISCUSSION

3.1. Taxonomy

The cultural, morphological, biochemical and chemotaxonomical properties of the strain 5 are presented in Tables 1 and 2. In the dependence of used medium *Streptomyces*, sp. 5 formed aerial mycelium from straw yellow with pink to gray. Substrate mycelium varied from yellow, walnut to dark brown. The strain 5 inhibited yeasts and fungi as *C. utilis*, *C. tropicalis*, *C. parapsilosus*, *P. chrysogenum*, *Alternaria* sp., *Cladosporium cladosporioides*. The culture didn't form melanin, DN-ase, and it utilized as a sole carbon source glucose, fructose, sucrose, and n-paraffin. The cell wall of the strain 5 contained LL-diaminopimelic acid (LL-DAP), glutamic acid, galactose. The results of the study of the cultural, morphological and chemotaxonomical characteristics of the strain indicated that it belongs to genus *Streptomyces*.

TABLE 1: CULTURAL CHARACTERISTICS OF THE STRAIN STREPTOMYCES SP.5

Medium	Growth	Aerial Mycelium	Substrate Mycelium	Soluble Pigment
ISP 2	3+	Straw yellow with pink	Dark brown	Pale yellow
ISP 3	3+	Straw yellow with pink	Ash gray	None
ISP 4	4+	Straw yellow with pink	Sandy	None
ISP 5	4+	Gray yellow	Sandy, brown	None
ISP 6	4+	Pale yellow	Pale gray	None
ISP 7	4+	Dark brown	Beige	None
Starch-casein agar	4+	Pale gray	Sandy	None

3+, good; 4+, very good.

TABLE 2: CHARACTERISTICS OF THE STRAIN STREPTOMYCES SP. 5.

Feature	Strain 3
Spore surface	Smooth
Spore chains	Rectiflexibilis
Aerial mycelium	Straw yellow with pink
Substrate mycelium	Sandy brown
Soluble pigment	Pale yellow
Temperature growth range	15-37°C
Cell wall sugar	Galactose
Cell wall amino acids	LL-DAP, glutamic acid
Production of melanin	None
Formation of:	
A-Amylase	Positive
Protease	Positive
DN-ase	None
RN-ase	Positive
Utilization of carbon sources:	
Glucose, fructose	Positive
Sucrose	Positive
Rhamnose, xylose	Negative
Glycerol	Positive
N-paraffin	Positive
Antibiotic produced	Heptaene

3.2. Antibiotic biosynthesis by *Streptomyces* sp. 5.

Preliminary investigations on the antagonistic activity of the strain detected that the strain 5 has antibacterial and antifungal activities. After screening for antibiotic activity on different media, the liquid medium FM was chosen, on which the maximal antibiotic activities were achieved at 120 h. after a formation of submerged spores Mycelium harvested by centrifugation was extracted with n-butanol. The Extract was concentrated at reduced pressure and stayed at 4°C for 24 h. The sediment was centrifuged, washed in acetone and dried at 40°C. The substance has a pale yellow colour and is soluble in methanol, ethanol, propanol, n-butanol, but has no solubility in acetone, chloroform, and petroleum ether. The antibiotic has negative reactions with ferric chloride and ninhydrin and a positive reaction with sulfuric acid. Different solvent systems were tested for antibiotic from strain 5. The system n-butanol-ethanol-chloroform-ammonia (4:5:2:5) was found to be the most favourable for the dividing of the antibiotic substance. Rf values of 5 detected spots were 0.52, 0.56, 0.63, 0.66; 0.75. The antibiotic was visualized by bioautography by *B. subtilis* ATCC 6633 or spraying with 2 % vanillin in 1.5 % sulphuric acid in ethanol and heating at 110°C for 5 min. Observations of UV spectrum of the antibiotic substance dissolved in methanol

showed that it has absorption maxima at 361, 381, 404 nm, which indicated polyenic heptaene nature. Minimal inhibitory concentrations (MIC) against different test cultures are presented on Table 3. The data showed that the antibiotic formed by *Streptomyces sp.5* is effective against yeasts and fungi and may be useful in the biological control of phytopathogenic fungi.

TABLE 3: MIC OF THE POLYENE ANTIBIOTIC PRODUCED BY STREPTOMYCES SP. 5.

Test Culture	MIC µg/ml
<i>B. subtilis ATCC 6633</i>	150
<i>B. idosus</i>	150
<i>B. mesentericus</i>	150
<i>B. pseudoanthracis</i>	150
<i>Staphylococcus aureus 209P</i>	150
<i>Sarcina lutea</i>	100
<i>Sarcina citrina</i>	100
<i>Escherihia coli</i>	150
<i>Serratia marcescens</i>	150
<i>Candida tropicalis</i>	0.1
<i>C. krusei</i>	0.2
<i>C. utilis</i>	0.1
<i>C. parapsilosus</i>	0.1
<i>Saccharomyces cerevisiae</i>	0.5
<i>Alternaria sp.</i>	50
<i>Botrytis cinerea</i>	50
<i>Fusarium oxysporum</i>	50
<i>Cladosporium cladosporioides</i>	50

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THE HUMAN RESOURCE FACTOR IN THE CONSTRUCTION INDUSTRY: IN WHAT WAY DOES THE ORGANISATIONAL CULTURE AFFECT IT?

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ABSTRACT

This paper aims at answering the strategic question, “In which way do the values embedded in an organisational culture affect the human resource factor “n” in the Greek construction industry”?

The construction industry is operating within a continuously changing environment a fact which influences the performance of construction companies. In addition, it has been criticized of poor performance because of the little development of its human resources.

In an attempt to improve the performance of the construction industry there is a need to examine in what way the organisational culture and the Human Resource Management influences the performance of a construction organisation.

A research was undertaken in 21 Greek construction companies. The primary data collected was through a closed questionnaire and overt participant observation. 210 full-time engineers participated in the research whereas the data collected was analysed by Excel.

Having discussed the findings of this research, suggestions for improvements are given. The limitations of the research are also acknowledged and recommendations for further research are given.

Keywords: Human Resource Management; Organisation; Organisational Culture; Culture.

1. INTRODUCTION

The objective of this paper is to present a topic of organisational culture and the way it has an influence on the human resources factor (Kamsaris, 2007) in the Greek construction Industry. Egan (as cited in Kaka and Brown, 2003, p.A-1) states that the construction industry is under achieving and argues that the construction industry has not perceived that people are “its greatest asset” (p.A-7). Furthermore, Egan states that “construction can not afford not to get the best from people” (p.A-7) a fact that highlights the importance of human resource management in the construction industry. The present research is based on a previous study conducted on the sector and a MSc dissertation, and it is important for companies engaging in the same industry, may use the results of this set of researches in order to increase the understanding of the human resources as mingling within the culture of a company developed within the

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construction sector. The products of this study are also important for the academic community interested in discovering the correlation of human resources factor with the organisational culture within the construction industry.

Thomas (1996) argues that changes occur and organisations have to manage them and face uncertainty and risks that stems from these conditions which can be due to the social and organisational structural changes, globalization of markets, technological, legal and regulatory changes, mergers, acquisitions and demographic changes.

A construction organisation consists of people who have to work together, although, they have different work interests and objectives, resulting in construction projects suffering from conflict and dispute, the consequence of which leads to delays, higher costs and schedule overrunning.

The major research question to be investigated within the present research is the following:

- In what way does the organizational culture influences the human resource factor?

1.1. Research contents

The first chapter contains the introductory stage to the research.

The second chapter includes the literature review. The purpose is to define the problem and the background of the study. This will include a bibliographical research, through books and up to date journals. In this chapter definitions related to organisational culture management and HRM will be included as well as the relevant theories.

The third chapter includes the research design and methodology which will describe the steps that will be undertaken in order to address the research questions, the research approach, the research techniques.

The fourth chapter includes data analysis and findings resulting from the research expressed through tables, diagrams and descriptions.

The last chapter includes the conclusions and recommendations and it will provide suggestion for further study in the future.

2. LITERATURE REVIEW

2.1. The concept of Human Resource Management

Huang (1999) argue that HRM has gained an increased interest for research since 1980 and this is according to Dyer, Smith-Cook, Ferris and Wright et al. (Huang, 1999) due to the fact that it provides a competitive advantage for an organisation as well as allowing them to achieve an efficient management. Druker, Liu, Ruan and Xu,

2005 first introduced the concept of human resource in “The practise of management” in which human resource has a key role for management practises.

According to Torrington, Hall and Taylor (2002) the definition of HRM is difficult to be given partly because it is used generically to describe activities of personnel management and partly because it is used to describe “a distinctive philosophy towards carrying of people-oriented or organisational activities” (p.6). Torrington et al (2002) define HRM as a distinctive approach to the management of people, HRM is related to the provision and development of HRM needs and is concerned with planning, monitoring and controlling of resources while problem solving is achieved by members of management on HR issues.

According to Marchington and Wilkinson (2006) the concept of HRM originated in USA in 1960s and 1970s while two schools of thought emerged, namely the Fombrun et al in 1984 and the Harvard framework in 1985. Fombrun et al (Marchington et al, 2006) advocated the linking of HRM to the organizational strategy and divided the “human resource cycle”(p.4) in four components, namely selection, development, appraisal and reward in order to determine the effectiveness in which they deliver improved performance. Contrary to Fombrun et al, the Harvard framework, according to Beer et al (Marchington et al, 2006) was divided HRM in six components namely the situation factors which relates to the organization’s environment, the stakeholder interest , the HRM policy chooses which is related mainly to employees influence, the HR outcomes in terms of commitment, competence, cost effectiveness and congruence, the long- term consequences in terms of individual well-being, organizational effectiveness and societal goals and the feedback loop.

According to Fombrun et al and Beer et al (Brewster and Bournois, 1991) HRM has both the “hard” as well as the “soft” approach. The hard approach of HRM demonstrates that people are resources within an organization as a result of which people should be managed in similar ways. Cost is the key factor for obtaining people while people should be viewed as a scarce resource depending on their quality and efficiency. The words “employees” (Brewster et al, 1991) is replaced by “human” or “people” (p.4). Contrary to the hard approach, the soft approach concentrates upon human demonstrating that creativity, commitment and skills of employees add value to an organization and generate competitive advantage. Therefore, the skills of people are the most important attributes for the success or otherwise failure of organizations.

The importance of managing HR is also emphasised by Walker (Snape et al, 1995) according to which “The challenge of managing human resource is to ensure that all activities are focused on business needs. All human resource activities should fit together as a system and be aligned with human resource strategies. The strategies in turn should be aligned with business strategies”.

2.2. Organisations, culture and organisational culture

Scott (2001) describes organisations as “multifaceted, durable social structures, made up of symbolic elements, social activities and material resources”. This view of the organisation from the perspective of sociological institutionalism seems to suit the purposes of this research.

According to Luthans and Hodgers (1989), culture is the acquired knowledge which people use to interpret experience and generate social behaviour. According to Hodgers and Luthans (1991) culture has the following characteristics:

- Culture is not inherited or biologically based; it is acquired by learning and experience;
- People as members of a group, organisation, or society share culture;
- Culture is cumulative and it passes from one generation to the next;
- Culture is the human capacity to symbolise or to use one thing to represent another; and
- Culture is structured and is integrated. Therefore a change in one part may bring changes in another.

Furthermore Hodgers and Luthans (1991) argue that culture also affects perception, that is, the process through which people receive, organise, and interpret incoming information, in other words a person’s view of reality, and stereotypes that are the tendency to perceive another person as belonging to a specific category. There are different perceptions for: “how people view themselves, how they view others and how they believe others view them” (Hodgers and Luthans, 1991).

Dawson (1996) describes organisational culture as "shared values and beliefs, which characterise particular organisations". Luthans and Hodgers (1989) further refine the concept stating, “Organisational culture consists of the organisation’s norms, beliefs, attitudes and values. Baumard (1994) argues that organisational culture can also be understood as a “tacit system of knowledge conversion and regulation and it is concerned with the organisational information systems”. Furthermore, “culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artefact” (Kroeber and Kluckhohn, 1952). We may therefore conclude that organisational culture consists of shared norms, values, beliefs and attitudes. Organisational culture is (explicitly or implicitly) expressed in all communication processes and shapes patterns of behaviour and action within the organisation.

3. RESEARCH METHODOLOGY

3.1. Research techniques

The research method that will be undertaken in the study is the use of questionnaires. Questionnaires, according to Marchington et al (2006), are conducted by using limited resources, do not cost much and results in a large sample. Background, behavioural and attitudinal data can be collected through questionnaires according to Brewerton and Millward (as cited in Marchington et al, 2006).

According to Bryman et al (2007), there are the closed questionnaires in which the respondents chose the answer from the options available or by using a five-point scale from strongly agree to strongly disagree; and the open questionnaires in which the respondents answers the questions in the form of a text in the several lines. Closed questionnaires are to be used as part of the research in the study, providing in that way quantitative data. Closed questionnaires, according to Bryman et al (2007):

- Allows an easy process of answers as the respondents will place a tick on the appropriate answer while the answers are already coded.
- Enable a researcher to make comparisons between the answers provided.
- Respondents are not required to write extensively, so, much easier.
- The respondent may not be able to find an answer, among the options given.
- Terms are understood differently by the various respondents.

According to Sekaran (2003), there are three ways in which a questionnaire can be administered:

- Mail (geographic allocation, complete at home, low response rate, no clarification).
- Electronic (easy administered, low cost, fast delivered, home, respondents use pc).
- Personally administered (little time for collection, motive for honest answer, low cost, high response rate, high anonymity of respondents).

The researcher used personally administered questionnaires.

The questionnaires were distributed to the subjects of the research on the 27th April 2009. They were administered in English but there were also available in Greek for those that were not confident with the English language. The amount of time it took for the questionnaire to be completed and delivered back was one to five days. The data collected is to be analyzed through the Microsoft Office Excel computer programme showing in diagrams the results.

3.2. Ethical consideration

All the data collected will be kept strictly confidential and anonymity will be preserved in order for the results to be valid and reliable. Therefore, the questionnaire will be completed anonymously so that people of the research would not worry that what they say may get back to managers or colleagues fact which would result to an adjustment of their answers accordingly.

3.3. Sample

According to Bryman et al (2007) there are six steps for selecting the sample size within the simple random sample.

- Defining the population. The “A construction company” is constituted by 136 employees from whom 94 are engineers.
- Selection of a comprehensive sample frame (only on full-time engineers 86/94).
- Decision of the sample size (55 full-time engineers).
- all the engineers in the population are listed and assigned with numbers (1-86).
- Engineers are selected with a computer programme generating random numbers.
- The sample size has been selected and is constituted by 55 subjects.

4. DATA COLLECTION AND ANALYSIS

The first four questions are intended to indicate the demographic profile of the subjects of the research such as gender, age, educational background and the years working in the company. Therefore, the research has shown that 55.8% of the sample are male compared to the 44.2% that are female. The largest percentage of subjects, the 48.1%, is between 31 and 41 years old, the 28.8% is between 21 and 31 years old and the 13.5% is between 41 and 51 years old. Only a small percentage of the sample, the 5.8% is over 51 years old and 3.8% are under 21 years old. The third question is concerned with the educational background. None of the subjects was merely a high school graduate. Instead, the largest percentage of the sample, the 57.7% has a University degree, a smaller percentage, the 23.1%, has a Technological Educational Institute degree whereas the lowest percentage which corresponds to the 19.2% has undertaken post graduate studies. As far as the years that the subjects of the research are working in the company is concerned the largest percentage, the 40.4% is working in the company between 1 to 3 years, the 28.8% is working in the company between 3 to 5 years, a smaller percentage, the 19.2%, is working in the company between 5 to 7 years whereas only the 11.5% is working in the company less than one year. These

percentages are shown in diagrams 4, 5, 6 and 7 below (Sample Demographic profile, graphs 1 - 4):

FIGURE 1: GENDER OF THE SAMPLE
(TROCHANA, 2009)

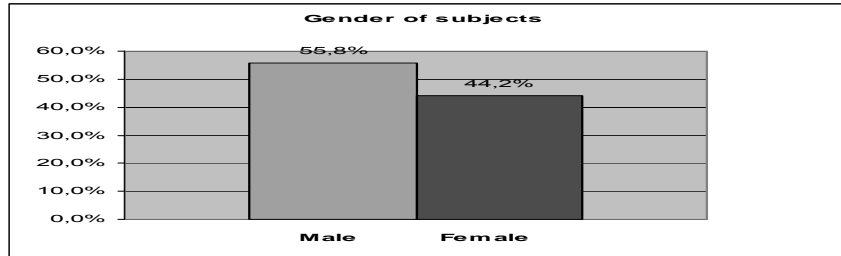
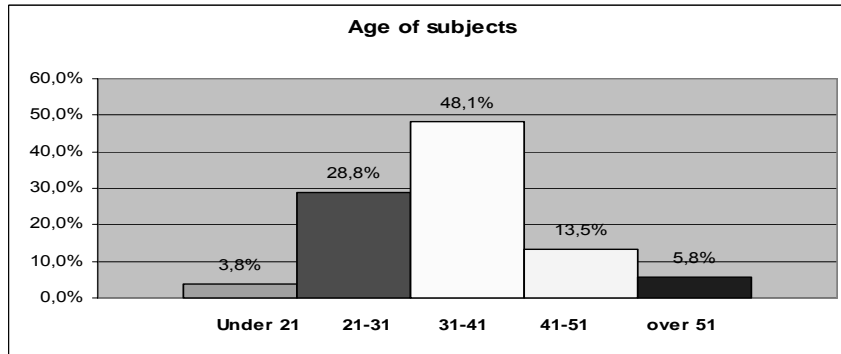


FIGURE 2: AGE OF THE SAMPLE
(TROCHANA, 2009)



The next question is concerned with which of the human, financial and physical resource subjects of the research believe is the most important for the company to control. 48.1% believe that human resource is the most important for the company to control compared to 36.5% which believes that financial resource is the most important. There is also a smaller percentage of 15.4% which believe that physical resource is very important.

FIGURE 3: EDUCATIONAL BACKGROUND OF THE SAMPLE (TROCHANA, 2009)

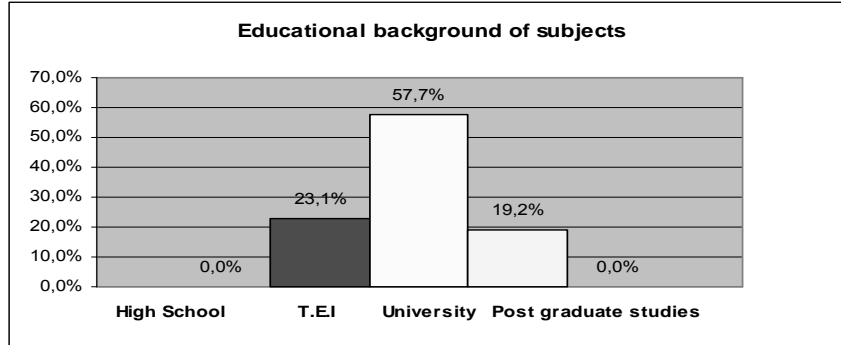
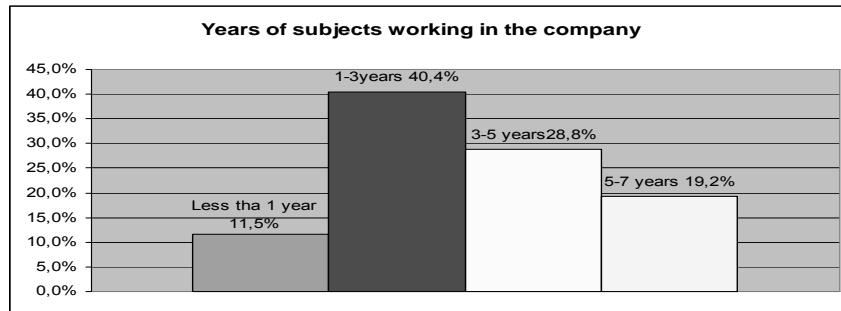


FIGURE 4: YEARS OF SUBJECTS WORKING IN THE COMPANY (TROCHANA, 2009)



The next question asked from the subjects of the research is to indicate what is for them the HRM? The largest percentage, 63.5%, replied that HRM aims at ensuring that people are developed towards achieving specific performance, then 26.9% replied that HRM aims at ensuring that the company is staffed with the appropriate people whereas the lowest percentage, 9.6%, replied that HRM is just related to the administration of the company. None of them replied that HRM is useless to the company.

FIGURE 5: THE MOST IMPORTANT RESOURCE FOR THE COMPANY (TROCHANA, 2009)

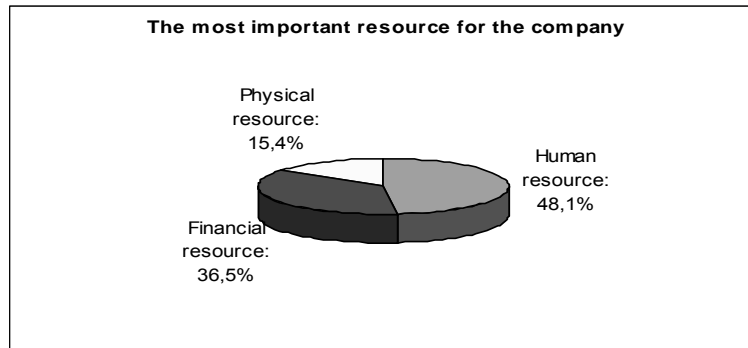
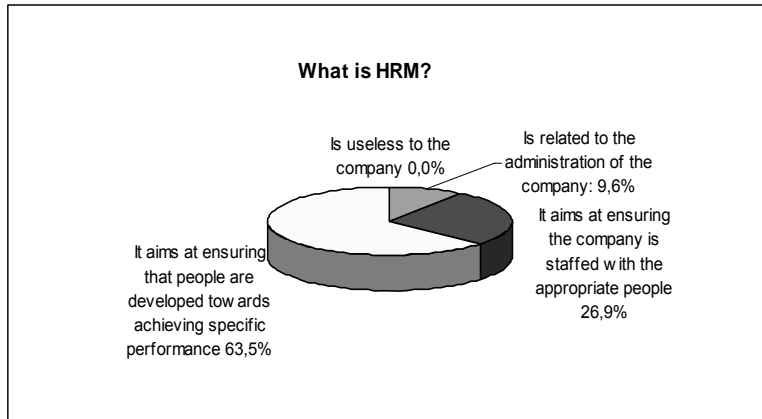


FIGURE 6: WHAT IS HRM ACCORDING TO THE SAMPLE? (TROCHANA, 2009)



In the next question the subjects of the research were asked whether the company is operating within a continuously changing environment. The largest percentage, 80.8%, believes that the company is operating within a continuously changing environment contrary to 19.2% that do not agree.

In addition, the subjects of the research were asked to indicate in which way the company can cope with changes when operating within a continuously changing environment. More than the half of the sample, 55.8%, replied that the company can cope with changes by continuously developing its people which a smaller percentage, 19.2%, replied that the company can adopt different political responses for each

circumstance. The 15.4% indicated that the company can dismiss its people and employ more capable whereas the lowest percentage, 9.6%, believe that the company can adopt the same political response for each circumstance in order to cope with changes.

FIGURE 7: THE COMPANY IS OPERATING WITHIN A CONTINUOUSLY CHANGING ENVIRONMENT (TROCHANA, 2009)

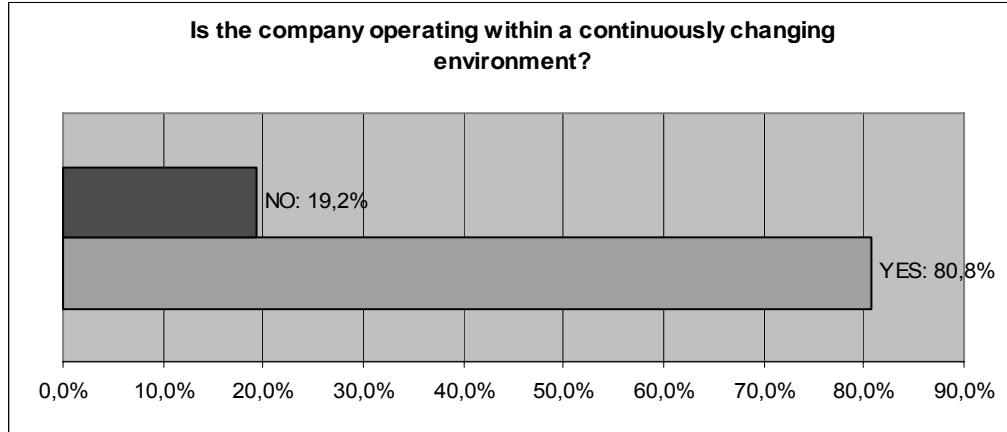
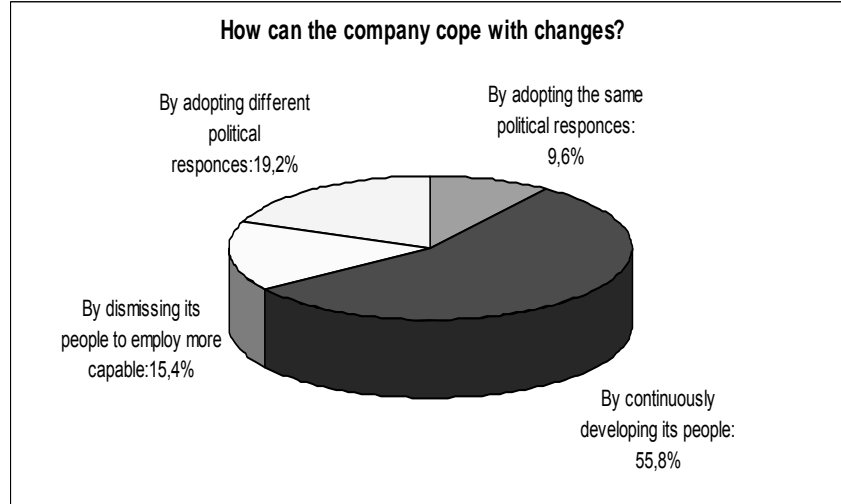
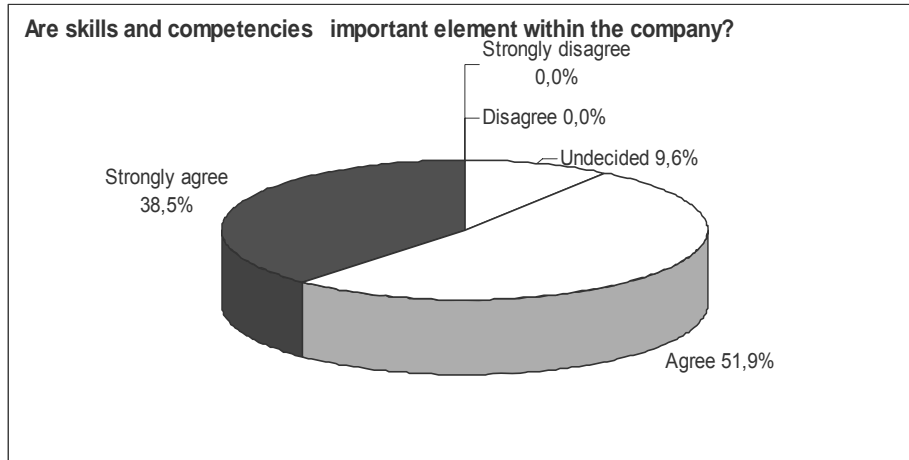


FIGURE 8: WAYS THE COMPANY CAN COPE WITH CHANGES (TROCHANA, 2009)



In the next question the subjects of the research were asked to indicate in a one to five scale, from strongly disagree to strongly agree whether people's skills and competencies are an important element within the company. None of them replied that they strongly disagree or disagree. Instead, the largest percentage, 51.9%, replied that they agree while 38.5% stated that they strongly agree. However, there was a small percentage, 9.6%, that was undecided.

FIGURE 9: THE IMPORTANCE OF SKILLS AND COMPETENCIES WITHIN THE COMPANY (TROCHANA, 2009)



Furthermore, the subjects of the research were asked to indicate what skills the company requires from its employees. The research has shown that technical skills, 48.1%, are the most important, contrary to the personal skills indicated by 30.8% of the sample and the educational skills indicated by 21.2% of the sample.

From 48.1% of the subjects that indicated the technical skills, the largest percentage, 44% believe that learning ability is the most important technical skill, while a 24% of the subjects believe that knowledge of construction methods is the most important technical skill the 16% believe that matches past solutions to present needs is most important whereas 8% of the subjects indicated that knowledge of the construction methods is the most important among others, while another 8% of the sample believe in the drawing skills.

FIGURE 10: TECHNICAL, EDUCATIONAL AND PERSONAL SKILLS (TROCHANA, 2009)

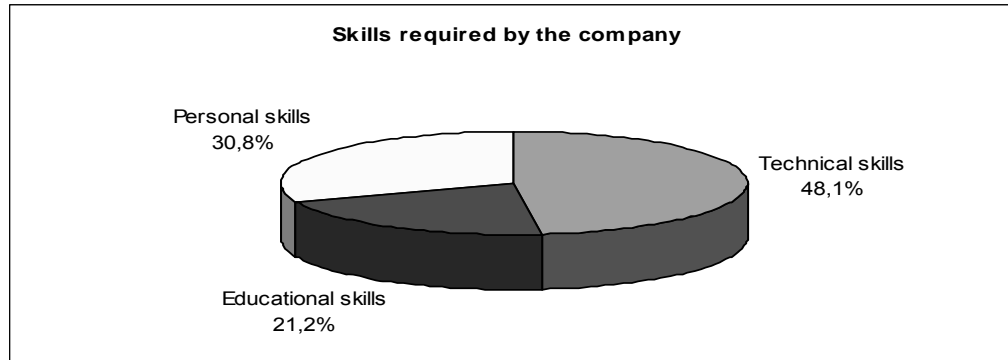
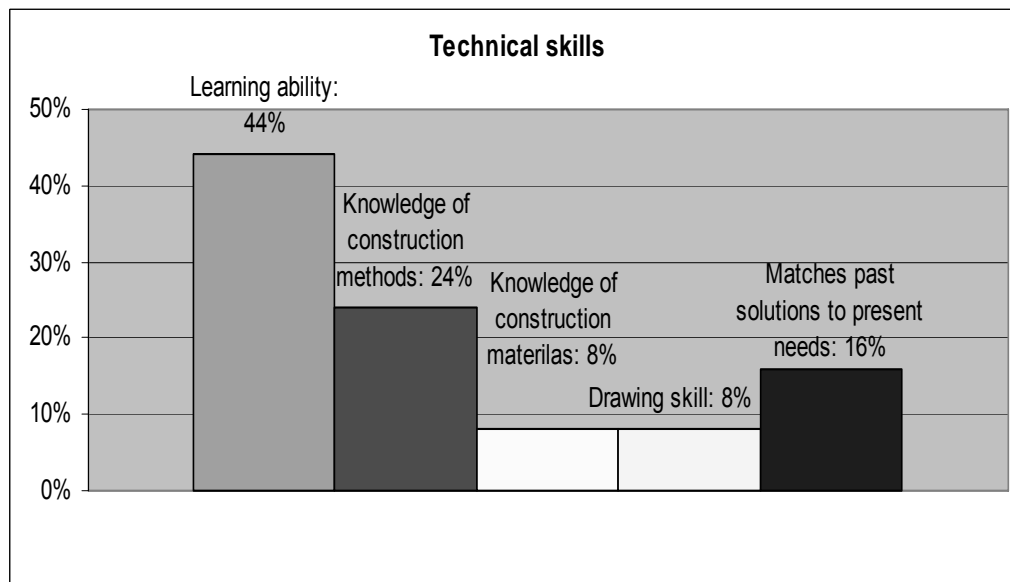
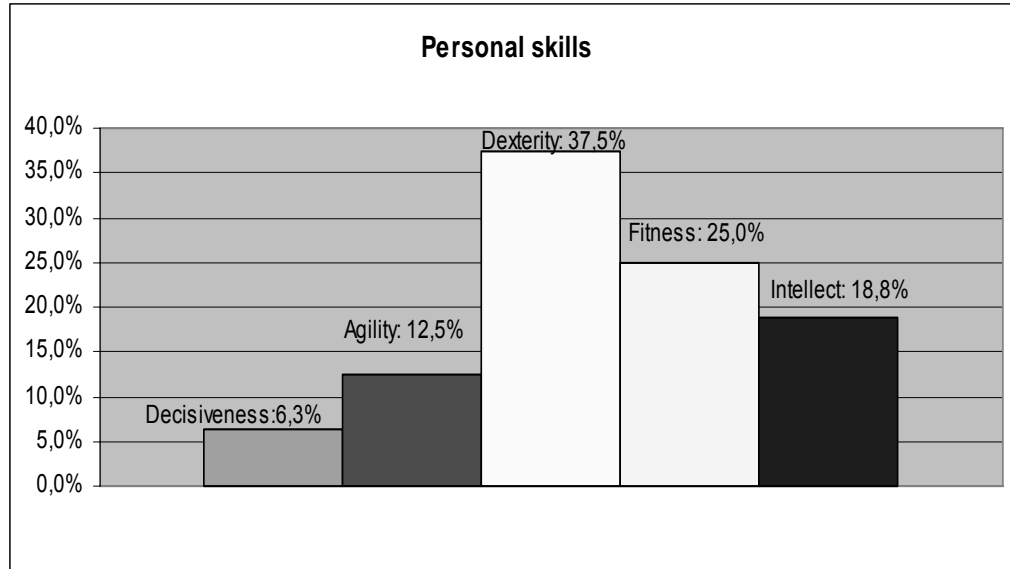


FIGURE 11: TECHNICAL SKILLS (TROCHANA, 2009)



From the 30.8% of the subjects that indicated the personal skills as the most important skill, 37.5% agree that dexterity is the most important personal skill, 25% of the subjects agree that fitness is the most important personal skill, 18.8% indicated intellect, 12.5% indicated agility as the most important among others whereas there was a small percentage, 6.3%, that indicated that decisiveness is very important.

FIGURE 12: PERSONAL SKILLS (TROCHANA, 2009)



From the 21.2% of the subjects that indicated educational skills as the most important skill the largest percentage, 45.5%, agree that problem solving skills are the most important educational skill. Then, a smaller percentage, 27.3%, believes that decision making skills are the most important skill whereas communication skills are highlighted by the 18.2% of the sample. There is also a small percentage, 9.1% that believe in the judgment of the quality of information as the most important educational skill.

Furthermore, the subjects of the research were asked whether training is important to their work. The largest percentage of the sample, 82.7%, indicated that training is very important compared to the 17.3% that indicated that some degree of training is necessary whereas none of them have replied that training is not important or a waste of time.

In the next question the subjects of the research were asked whether the company has ever provided them with training practices. 38.5% replied positively compared to 61.5% that replied that the company has never provided them with training practices.

From the 38.5% that have been provided with training practices the largest percentage, 55.0%, been trained through seminars, 20.0% through stimulating them to seek the advice by a colleague that has a greater experience, 15.0% through team-working whereas only 10.0% through conferences.

In addition the 38.5% that have been provided with training were asked to indicate the effects of training at their work. The largest percentage, 50.0%, indicated that training has resulted at increasing their skills, 30.0% indicated that their effectiveness has been improved and 5.0%, indicated that training has resulted at increasing their productivity. However, there is also a small percentage, 15.0%, that indicated that training has no effects at their work.

FIGURE 13: EDUCATIONAL SKILLS (TROCHANA, 2009)

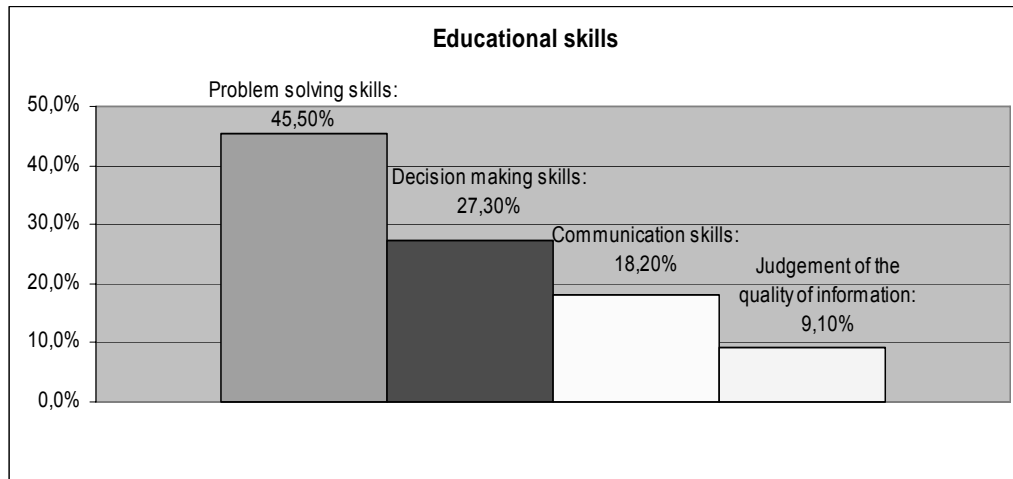


FIGURE 14: THE IMPORTANCE OF TRAINING WITHIN THE COMPANY (TROCHANA, 2009)

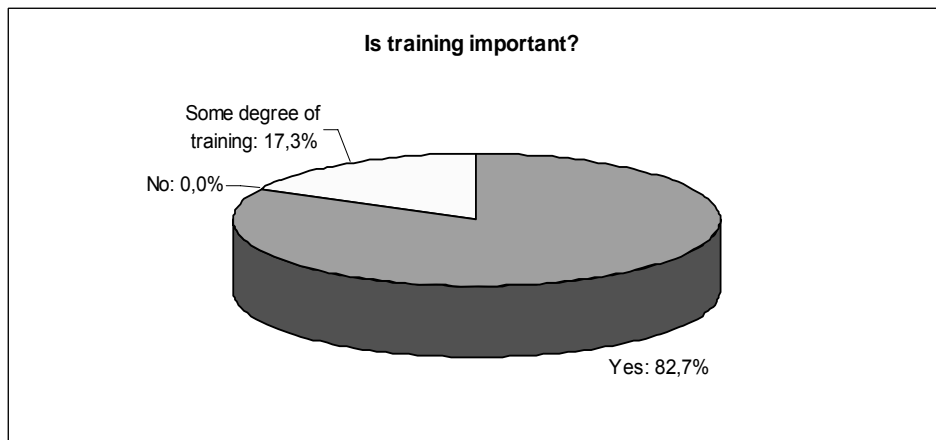


FIGURE 15: THE DEGREE TO WHICH THE COMPANY IS PROVIDING TRAINING TO THE SUBJECTS (TROCHANA, 2009)

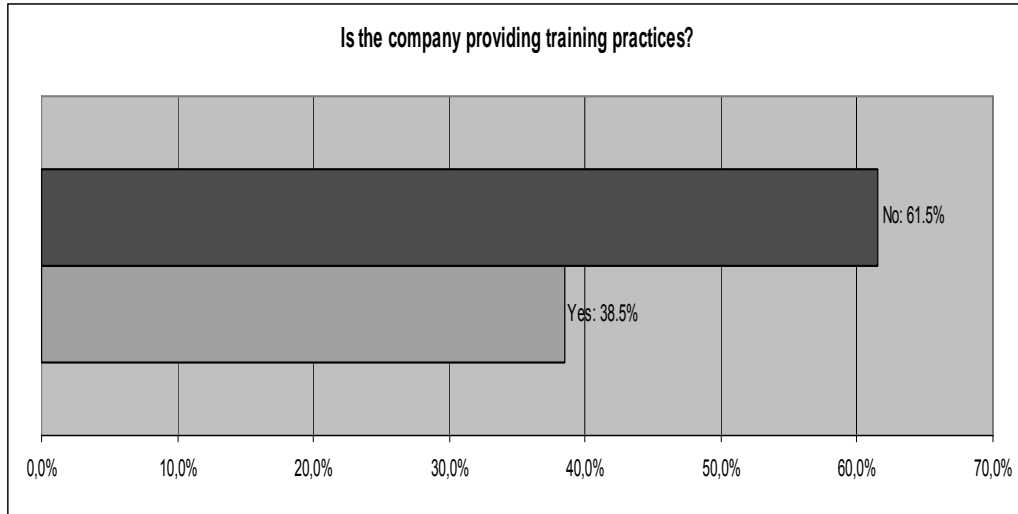


FIGURE 16: WAYS THE COMPANY IS PROVIDING TRAINING PRACTICES (TROCHANA, 2009)

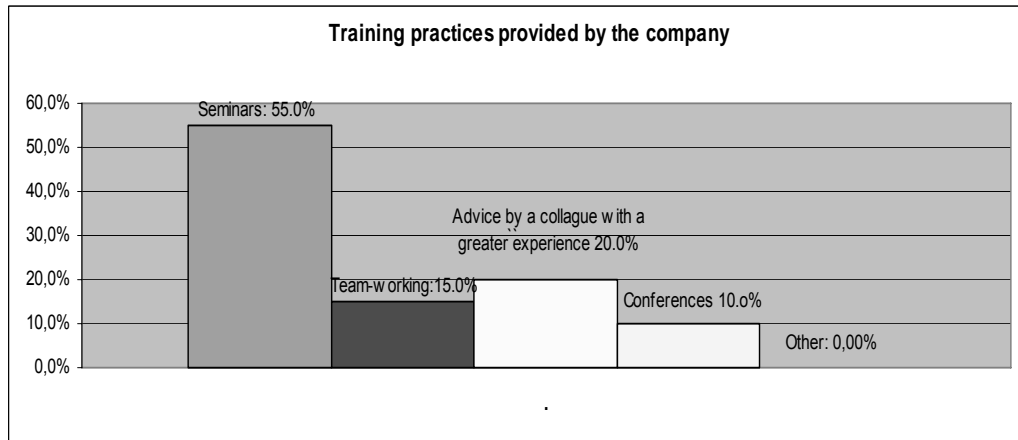


FIGURE 17: THE EFFECTS OF TRAINING PROVIDED BY THE COMPANY TO THE SUBJECTS. (TROCHANA, 2009)

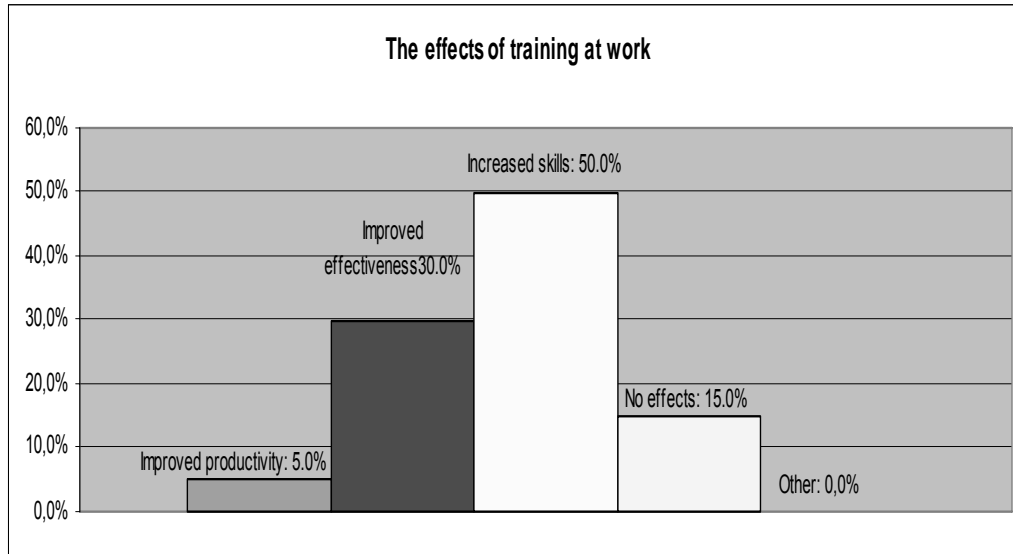
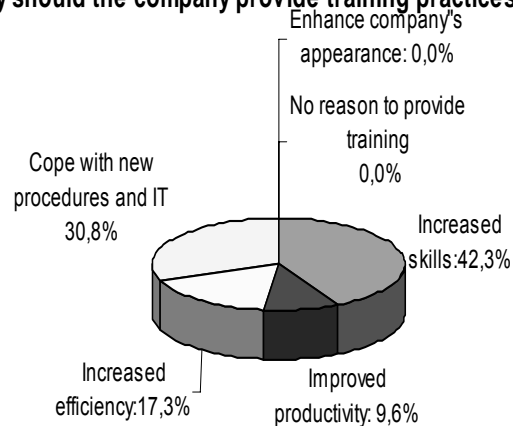


FIGURE 18: THE REASON FOR THE COMPANY TO PROVIDE TRAINING (TROCHANA, 2009)

Why should the company provide training practices?



Moreover, the subjects of the research were asked their opinion about what is the most important reason for the company to provide them with training practices. 42.3%

answered that training is important in order to increase their skills, 9.6% to improve their productivity, 17.3% to increase their efficiency and 30.8% to enable them to cope with the introduction of new procedures and information technology. None of them replied that training, is important in order to increase the company's appearance nor that there is any reason to provide them with training practices.

In addition the subjects were asked whether the company has ever motivated them to work harder in order to achieve specific objectives. 75% replied positively compared to the lower percentage, 25%, that replied negatively.

75% of the subjects of the research that replied positively were asked to indicate the type of motivation that the company has provided them. Reward was indicated by the largest percentage of the subjects, 82.2% as the most predominant type of motivation provided to them. Recognition is the second type of motivation indicated by a significant lower percentage, 10.3%, whereas personal development was indicated only by 7.7% of the subjects of the research.

Furthermore, 75% of the subjects that replied that the company has motivated them to work harder were asked to indicate the effects of motivation at their work. A significant percentage of the subjects of the research, 69.2%, indicated that motivation has resulted at an increase in their productivity. 20.5% indicated that their effectiveness has been increased whereas 10.3% indicated that there were no effects at their work.

Moreover, the subjects of the research were asked what the most important type of motivation is, according to their opinion. A significant percentage of the subjects, 40.4% indicated that the economic incentive is the most important. 23.1% of the subjects indicated that personal achievement is the most important type of motivation, 17.3% indicated recognition as the most important, 13.5% indicated job security whereas the lowest percentage, 5.8%, believes that promotion is the most important.

In the next question the subjects were asked whether the company provides them with the freedom to take on decisions related to their work. 80.8% replied positively compared to the lower percentage 19.2% that replied negatively.

5. CONCLUSIONS AND RECOMMENDATIONS

The results of this study showed that there are differences in the level of education, understanding of the organisation, the organisational culture, organizational communication, the effects the organisational culture has on the communication between the administration and the engineering, self-perception, the perception of the forms of communication developed within the company, perception on the way communication produces conflict or conflict resolution and on the sources of that problem, in the perception of the communication smoothness, of the communication process assumptions, of the results that representation produce, of the change in communication, of the same in communication, of the way to benefit. However, there

are also differences suggested in the perception of the one department with respect to the other and self-perception when comparing the two departments that deserves further study.

This research has found that skills and competencies are very important to the company and that technical skills are primly required by the company among personal and educational skills. According to a past research, undertaken by Fortune et al (1994), within these three categories of skills the acquisition of knowledge was found to be the most significant characteristic within technical skills, compared to this research which revealed the same result. Within the educational skills the past research revealed that problem solving is the most significant among others. In the same results concluded the quantitative analysis of this research however, the qualitative analysis revealed that communication skills are more important as problem solving can be achieved through an effective communication between parties in teams. Within the personal skills the past research revealed that the development of a good intellect is the most important characteristic contrary to this research that concluded that dexterity is most important.

Training, according to the past researches, was found to be very important to an organisation as according to Hughey et al (1997) it increases the efficiency of employees whereas a number of past studies has shown that there is a positive linkage between training and productivity (as cited in Barrett et al , 2001). The quantitative analysis of this research has shown that undoubtedly training is very important to the company however, only a small percentage of employees within the company are provided with training practices. In addition, this research has revealed that training resulted to an increase level of skills and effectiveness. The effects of those that have not been provided with training, as revealed by the qualitative analysis, were a decrease at their efficiency, productivity and level of skills.

According to the literature review, motivation aims at increasing people's effectiveness as well as at maximising their contribution to the organisational performance. Despite the fact that reward has been seen by some researches as preventing an organisation to achieve quality (as cited in Soltani et al, 2004) both reward and recognition can result to the increase of an organisation values, performance and continuous learning (Milne, 2007). However, according to Argyris (as cited in Osterloh et al., 2000) managers prefer a reward as the intrinsic motivation which can be difficult to implement and often without guaranteed success. This is also true in this research were motivation was found to be very important to the company and in which reward was the primary type of motivation. However, reward has resulted to an increase to the level of productivity rather than effectiveness a fact that resulted at many problems requiring additional amount of time to correct them.

5.1. Limitations of the study

The research does not include interviews as a qualitative research method of collecting information such that the interviewees' own behavior, attitudes, norms, beliefs and values (Kamsaris, 2007). Furthermore, the closed questionnaire used as part of the quantitative research method of collecting information means that the subjects might have not been able to find an answer, among the options given, that correspond to them better despite the fact that this was tried to be resolved by providing a category of "other" in which the respondents could explain.

5.2. Recommendations for future research

This research can give useful information to other researchers so as to avoid pitfalls. Considering future research, investigation can include a largest sample size. Furthermore, it is recommended to future researchers to investigate different groups of engineers in different sub-sectors such as civil engineers, architects, electrical engineers, mechanical engineers while comparing and contrasting the different groups. Moreover, it is also recommended to use interviews as a further research technique in order to collect further information in terms of the interviewees' own behavior, attitudes, norms, beliefs and values.

FIGURE 19: THE IMPORTANCE OF MOTIVATION WITHIN THE COMPANY (TROCHANA, 2009)

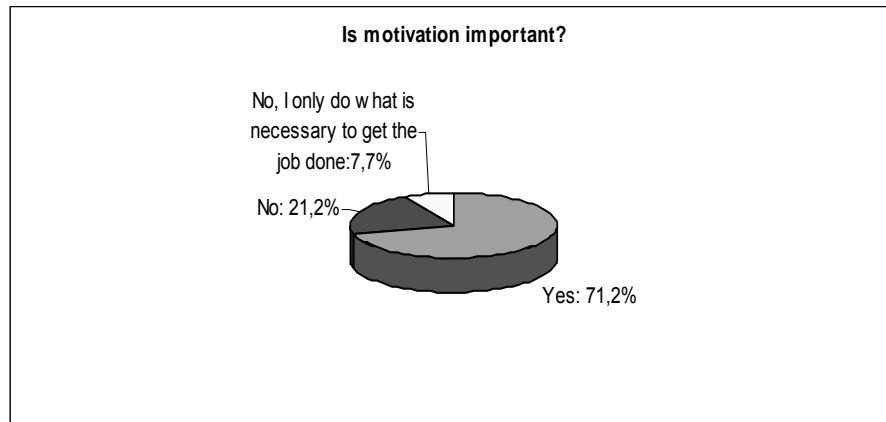


FIGURE 20: THE DEGREE TO WHICH THE COMPANY IS PROVIDING MOTIVATION TO THE SUBJECTS (TROCHANA, 2009)

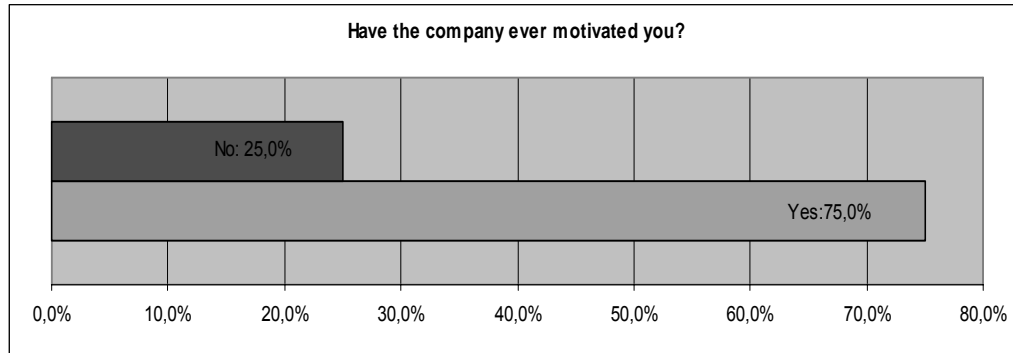


FIGURE 21: TYPES OF MOTIVATION PROVIDED BY THE COMPANY (TROCHANA, 2009)

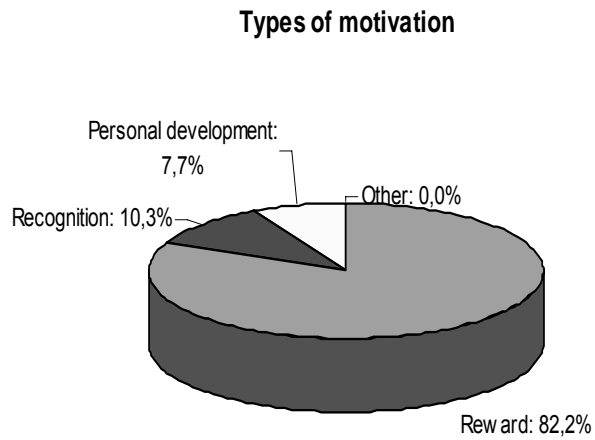


FIGURE 22: THE EFFECTS OF MOTIVATION TO THE SUBJECTS (TROCHANA, 2009)

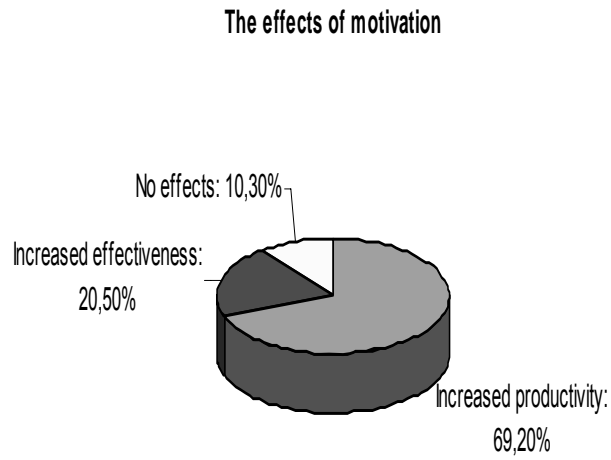
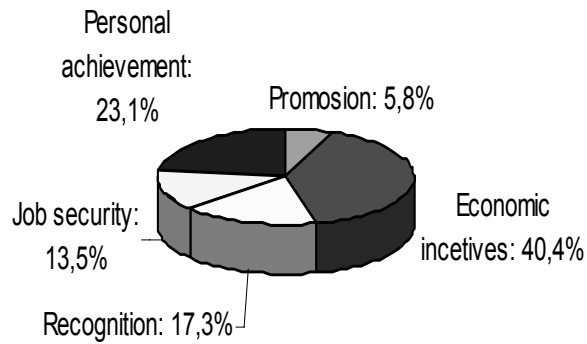


FIGURE 23: TYPE OF MOTIVATION MOST IMPORTANT FOR THE SUBJECTS (TROCHANA, 2009)

The most important type of motivation for the subjects



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COMPLICITY BETWEEN CONSUMERS: A SERVICE RECOVERY
STRATEGY EXPLORATORY RESEARCH
AND ATTEMPT OF DEFINITION

DOMINIQUE ANTONINI*

ABSTRACT

The purpose of this article is to attempt to define the relationships of complicity, to discover how they develop and in what way they may affect services marketing outcomes.

Several scientific fields form the base of the study. Even though there is a vast theoretical background¹, there is to date a lack of conceptual clarity and definition. The paper mobilizes qualitative methods: an ethnographical study based on participant and non-participant observations and semi-structured personal interviews with 'experts'.

The paper reveals that complicity between customers takes the form of spontaneous reactions which correspond to an emotional service recovery strategy, following a service failure. Relationships of complicity also can be a customer satisfaction amplifier.

The research introduces a new concept in Management. Complicity may be a source of value, for both the firm and the customer.

Keywords: Complicity; Service Recovery; C to C Relationship; Emotions; Customer Satisfaction; Correction of Servuction.

1. INTRODUCTION

For some three decades the marketing trend has been based on proximity and customer relationship. Customers have become expert consumers. These “new” customers are described as being unpredictable, nomadic, lacking in loyalty and also of being impatient and a “vigilante”. Not only they rapidly communicate and exchange information, thanks to new technologies but they are also able to form close relationships. They group up together in a variety of ways so as to form a “counter-power” to defend their interests in the face of commercial enterprises. As witness the tribal phenomenon and more recently that of the “tuangou”.

When confronted with the deficiencies on failings service sites, the customer introduces connective practices to respond to normative incoherences (Aubert-Gamet, 1997) thus providing a “service recovery” action. It is a kind of opposition to the enterprise, and in this context, one word regularly occurs: ‘complicité’ (*complicity*), rooted in French commercial services narratives.

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On the one hand one talks about complicity, with the brand, of complicity between customer and sales person, of complicity between publicity and the onlooker, “Complice” is a famous clothes brand. On the other hand one sees alliances of consumers against the firm or enterprise which strongly resemble spontaneous or organized ‘complicity’.

To the author’s knowledge there is no definition of complicity in Marketing. There are interpersonal relationships or organisation mechanisms that to some respects resemble relationships of complicity.

Here the relationship of complicity is presented as a spontaneous joint action between 2 or 3 consumers who are physically present, previously unknown to each other and who form an interpersonal relationship (of service recovery) to compensate for their frustration and thus act together against the enterprise.

The first section sheds light upon the etymology and the existing definitions of complicity in other scientific fields. Then, section 2 states the absence of relevant literature in Marketing and Service Marketing. An exploratory research is conducted in section 3. Section 4 posits a definition and a model of complicity. At the end of the article (section 5) a discussion is submitted and further paths research are suggested.

2. ETYMOLOGY AND EXISTING DEFINITIONS

2.1. Etymology and semantic field

The term derives from the contraction of two Latin words: the preposition *cum* (with) and *plecti* (the passive voice of the verb *plectore*). *Plecto, pectore* bears two meanings: to interwin, to fold, to plait and to inflict a punishment, castigate, corporal punishment. The word can be found in expressions such as *culpa plectatur*, (the fault is punished), *capite aliquem plectere*, (to punish by death sentence). The words ‘*complicem*’ and ‘*complex*’, mean ‘*closely connected*’ by thought (Dubois, Mitterrand, Dauzat, 2005). This close connection may be found in the semantic field of ‘*complicity*’ in several European languages.

The semantic field of *complicity* (Ploux, Manguin, 1998) is structured in three groups of words. The first one encompasses “agreement, union, intelligence, collusion, connivance, accomplice”. The second group covers “association, cooperation, collaboration, participation”, and the last one includes “help, assistance, support, mutual aid”. The three groups can be respectively called: agreement, action and help.

2.2. Existing definitions in Law and standard usage

In Law the term ‘*complicity*’ generally bears a negative connotation. The Concise Oxford Dictionary (2006) and the Webster’s Dictionary (1996), give respectively the

following definitions: ‘*Partnership in an evil action*’ and ‘*Association*’ or ‘*participation in a wrongful act*’. The French Penal Code defines *complicity* as “a wrongful act” to be punished”, (2006, art. 121-7 & 121-6). The wrongdoer and his accomplice deserve the same punishment because without the accomplice’s action the wrongful act could not have been committed (Roujou de Boubée and al., 1996). The wrongdoing is always done at the expenses of a third party.

Generally speaking in social interactions, ‘*complicity*’ depicts a close and privileged relationship between two people, friends or relatives for example. The Oxford Concise Dictionary gives the Latin roots: *complicem*, *complex*, (‘closely connected’). The French Robert Dictionary defines ‘*complicity*’ as ‘a deep and often non-verbally expressed spontaneous agreement or understanding, between people and as a knowingly participating in a crime committed by another (translated by the author).

Other scientific fields deal with relations akin to *complicity* and enter either the legal framework (The Imperfect Competition Theory) or the social one [The Agency Theory in and the ‘*Social Agreement Tactic*’ (Rudmin, 2003) in Social Psychology].

Therefore it is stated that ‘*complicity*’ may be analyzed according to two conceptual approaches: a legal one, and a psycho-sociological one.

From this first section key components can be inferred: a spontaneous agreement often implicit, between two participants physically present, in respect to an action, without somebody’s knowledge or at somebody’s expense (a third party), generated by self-interest or feelings. The participants are equals.

3. ABSENCE OF RELEVANT LITERATURE IN MARKETING

To the author’s knowledge there is no definition of *complicity* in Marketing. The abundant Services Marketing and Relationship Marketing (Morgan and Hunt, 1994) literature pin points the importance of customer-salesman interactions, commitment, and continuous contact with customers that to some respects, resemble relationships of *complicity*.

Whether a service encounter (Shostack, 1985) applied to any human interaction in a context of services (Bitner et al. (1990), or a ‘commercial friendships’ (Hartup, 1975; Hays, 1985; Price and Arnould, 1999), whether agentic or communal relationships (Clark et al., 1986; Goodwin, 1996), interpersonal relationships do have social impact on people (Goodwin and Gremler, 1996) and influence the customer’s service perception and loyalty.

The literature of customer-to-customer relationships deals with virtual communities of transaction or forums, in which consumers partake in discussions whose goals include attempts to inform and influence fellow customers about products and brands (Kozinets, 1999). Customers also use on-line communities to vent their frustration (Hirschman, 1970), to complain to other customers and spread negative

word of mouth communications (Schoefer and Ennew, 2003). Buzz spreads and grows because of the customer's relationships to other customers (Buttle, 1998; Godin, 2000). Communitarity can also be found in face-to-face relationships (Goodwin, 1996). Relationships are different when customers belong to a community. Communal relationships alter the dynamic of the service encounter, influencing the way consumers and providers respond to each other's behaviour, (Arnould and Price, 1993).

In services, certain concomitance relationships resemble *complicity*. Consumers often start up conversations to pass the time and to have a pleasant journey. Conversations also provide an opportunity for many passengers to display their expert knowledge as 'partial employee' (Harris and Baron, 2004), within the delivery system. Some passengers are help-seekers, others may offer advice and information without being asked for it (proactive helpers), or only after being asked for it (reactive helper). In addition, customers' influence upon other customers is uncertain and depends upon complex variables which represent consumer heterogeneity. The concept of Compatibility Management (Pranter and Martin, 1989), brings forward social variables, such as group membership, poverty or education levels; or physical characteristics, such as tall people blocking the view of shorter customers, neotribes (Eiglier, 2004), or psychological features, such as the need for recognition, positive and negative mood, stereotypical or prejudicial beliefs and attitudes (Knowles et al., 1993; Bakamitsos and Siomkos, 2001; Isen, 2001); and finally situational variables such as discretionary time, close physical proximity or differences in past service experience. Purchase pals and customer relationships are very similar to relationships of *complicity*. The presence of purchase pals produces a change in the likelihood of purchase by customers; they may decrease or increase the likelihood of a purchase (Woodside and Sims, 1976), offering the customer an unbiased view of the situation. Their influence depends upon the price, the customer's knowledge about the product and the perceived expertise attached to the salesman.

Bourgeon-Renault et al. (2006) describe the case of short-lived communities thrown together by chance in extreme situations. Three clients are caught up in a difficult situation from which they cannot extricate themselves. They are on an outing at the mercy of a transport organization and a time table. The visit proves to be tiring and disappointing: dissatisfaction grows and it becomes obvious that the outing is a failure. Consideration for the organizers efforts and preferences put the tourists in a disagreeable and even in an unbearable position. So, in hushed voices they mock the guide, telling each other jokes and making puns and bets on the guide's errors. At the end of the visit they feel good and happy. The tourists set up a psychological method to escape boredom. This gave rise to emotions.

However, with regard to the components of *complicity*, none of those relationships are *complicity*. The service encounter and service relationships imply an agreement, an action (by means of cooperation or co-production), unspoken elements (due to

conventions, habits, traditions), reciprocity and conditionality (reciprocal expectations, conditions of permission or encouragements). However, there is no spontaneous behaviour since it takes time to establish friendly relationships with the customer, to know and to understand him/her and to follow him/her up. A successful customer relationship hinges upon social and information exchanges; therefore unspoken elements are out of the question. The service relationship is dyadic; there is no third party. As for commercial friendships, they are asymmetric; they demand closeness and self-disclosure. More than in any other kind of relationship, money and friendship are not a good combination and complicate personal interactions.

Communal relationships very much resemble relationships of *complicity* but are not exactly the same because there is no third party and since communal relationships take time to develop; they are not spontaneous interactions. Purchase pal-customer relationships and concomitance relationships resemble *complicity* very much. They encompass almost all the components of *complicity* (excepted unspoken elements or spontaneity according to the situations). However, they are not sufficient to form a literature background.

Hence, it can be stated that there is an absence of relevant literature on *complicity* and consequently, no definition, nor research to date. In addition, there is a lack of conceptual clarity between providing help or advice to another customer (meaning “doing somebody a favour”) and starting up relationships of *complicity* with him.

Emotions appear indirectly across the literature above studied, strongly bound to C to C relationships.

Therefore, further studies have to be undertaken to deepen the understanding of relationships of *complicity* between customers in a service context, to identify a priori categories of *complicity* and participants and provide examples of *complicity*. One of the purposes will be to discover whether relationships of *complicity* develop, what they mean to participants, and in what way they may affect services marketing outcomes.

4. EXPLORATORY RESEARCH

4.1. Objectives and methodology

There is a service delivery to a greater or lesser extent in any commercial exchange. Our research was intermittent over a three months period. It was conducted in a large metropolitan area of the South of France. The research consisted of two studies representing different methods and perspectives. Qualitative data analysis (Kozinets, 1999), was applied.

The aim of study 1 was to deepen the understanding of relationships of *complicity* between customers in a commercial context. It was carried out in two phases.

Semi-structured personal interviews with ‘experts’ were conducted. They lasted approximately half an hour to one hour. Interviews were live, recorded and transcribed. Then a manual content and thematic analysis of consumers’ comments was conducted.

Experts interviewed were: a psychiatrist, being an expert in the human being’s behaviour and difficulties ; a chief constable, for the same reasons but also because he is knowledgeable in (illegal) *complicity* ; a management consultant and a managing director of a big banking group because of their knowledge of organisational and commercial strategies in a service environment ; two deputy mayors because they practice human and diplomatic relationships, and strategies of influence; a senior data processing analyst, for his sense of logic and his systemic view of the world ; a group of young people, (aged roughly from 20 to 25), since they have an acute sense of affective relationships and strategies ; a supervisor of hospital nurses because she knows the problems of people on a medical scale - people confide in her and she knows what self-sacrifice means ; and finally a human resources manager and a professor of philosophy for their experience in the human domain.

Study 2 is an ethnographical study (Glaser and Strauss, 1967). Analyses have been carried out to identify a priori categories of *complicity* and participants. Our sampling set out to enable us to discover whether relationships of *complicity* develop, what they mean to participants, and in what way they may affect marketing outcomes. Participant and non-participant observations were carried out. Participant observation is particularly appropriate to studies of interpersonal group processes, (Bruyn, 1966). By immersing him- or herself in the subject being studied, the researcher is presumed to gain understanding, perhaps more deeply than could be obtained, for example, by questionnaire items. Arguments in favour of this method include reliance on first-hand information, high face validity of data, and a relatively simple and inexpensive method. Zelditch (1962) emphasizes participation as an opportunity for in-depth systematic study of a particular group or activity. These methods of exploratory data collection provide the basis for the subsequent findings and their discussion. Twenty-four situations of interpersonal interactions were observed in services environments where people are most likely to have intense contacts and intimate proxemics.

Finally, situations which had nothing to do with commercial concern were set aside, (e.g. A car driver informs another car driver that policemen are at the next crossing by flashing his head lights), as well as all cases of (illegal) *complicity* (a customer steals something at the supermarket; the other customers pretend not to see him).

4.2. Findings

Differences between “doing somebody a favour” and complicity:

It emerged from our study that “doing somebody a favour” has nothing to do with starting up relationships of *complicity* with him because:

1. Doing somebody a favour implies a dyadic relationship, while relationships of *complicity* are triadic relationships;

2. The nature of *complicity* is always the same (*complicity* is always *complicity*) whether between friends or strangers, while doing somebody a favour does not have the same moral impact because it creates a debt of gratitude. There is no debt between participants in a relationship of *complicity*. The reasons that lead one to do somebody else a favour are numerous: one can do through altruism, moral satisfaction or for one’s personal interest (because one expects something in return for the favour).

3. The emotions caused by relationships of *complicity* are strong since they are linked with needs for recognition, while the emotions caused by doing somebody a favour are either weak, if the other is a stranger, or of a different nature, because of cultural or religious reasons (*«love your neighbour as you would have him love you»*).

4. Contrary to relationships of *complicity* there is neither connivance, nor exclusive relationship between the favour provider and the one who benefits from it.

5. The relationship between the protagonists of a favour are asymmetric: there is an assistant and a receiver; whilst ‘*complices*’ are equal.

6. One does somebody a favour because one is in physical proximity or because they have social or business relations, while relationships of *complicity* only imply intellectual proximity. To sum up relationships of *complicity* represent a kind of social organization, whereas doing somebody a favour is the consequence of a social organization, and create complex relationships. Relationships of *complicity* can be established as a game, for fun, but there is no fun in doing somebody a favour. A favour stems from a problem, while relationships of *complicity* stem from an event external to the relationship, or from previous relationships. Asking for a favour needs civilities, relationships of *complicity* do not.

**TABLE 1: DIFFERENCES BETWEEN
“DOING SOMEBODY A FAVOUR” AND COMPLICITY**

	Doing Somebody a Favour	Complicity
Relationship	Dyadic asymmetric	Exclusive homothetic
Emotions	Weak	Strong
Consequences	Moral debt	No debt
Social organisation	Strong cultural duties	Social balance

Game	Never	Can be
Proximity	Physical	Intellectual
Civilities	Compulsory	Not compulsory

4.3. Other findings

The definition of relationships of *complicity* the ‘experts’ gave is close and complementary to the components given in section one. Customers defined relationships of *complicity* in a commercial context as a mental state in which people who share the same viewpoint about life find themselves. ‘*Complices*’ understand each other without talking to each other. Relationships of *complicity* are privileged and exclusive relationships. They are established between a small number of people who have their own « territory » without the knowledge of anybody else. *Complicity* implies that participants are physically and mentally close and intimate, and identify with each other. *Complicity* also implies help providing, reciprocity and cooperation. Relationships of *complicity* can be either dyadic relationships, between a salesman and a customer or between two customers, or triadic relationships two people for or against a third party. Our study revealed other features. Relationships of *complicity* can be a kind of game, making fun of somebody or as a social strategy. Relationships of *complicity* imply an ongoing and increasing dynamic process, *complicity* entails *complicity*.

Complicity can be explained by affinities, commercial friendships, as well as people knowledge and understanding of the other people (whether customer or salesman). The salesman’s empathy towards the customer and the spontaneity of people also explain the way *complicity* arises. Relationships of *complicity* can also arise if there is a previous friendship between people or if an event occurs. However relationships of *complicity* cannot be thoroughly explained because they depend upon the alchemy between people: they are irrational and even innate.

The studies revealed how and why relationships of *complicity* are built up. There are two types of relationships of *complicity*. The first one, relationships of *complicity* between customers as a service recovery strategy, and the second one, relationships of *complicity* as a customer satisfaction amplifier. Two customers can form a league for or against another customer, an employee or the firm. A customer and an employee can form a league for or against another customer. Three types of activators were identified: a service failure, commercial friendships and an event external to the service encounter. When relationships of *complicity* are triggered off by a break-down or a failure in service delivery, these are mainly: a failure in control, a failure involving contact personnel and a failure or insufficiency in the physical environment.

To be efficient, relationships of *complicity* imply the agreement of participants.

Relationships of *complicity* between customers are spontaneous reactions and service recovery strategies or service failure corrections, based upon help, compassion and temporization. Customers help each other, show compassion and solidarity to other customers or temporise conflicts in order to de-dramatize situations between two people. Most of the time C to C relationships of *complicity*, for or against another customer are recovery strategies or «*servuction correction*» (Aubert-Gamet, 1997); More infrequently they are a game or customer guerrilla (Aubert-Gamet and Cova, 1997). B to C relationships observed are not relationships of *complicity* but only dyadic commercial friendships. Relationships of *complicity* generate emotions.

The studies provided examples of relationships of *complicity*:

C to C relationships of *complicity* against the firm: In a railway station there is a charge for the use of public toilets. A coin has to be inserted into a device affixed to the door. A user goes out and holds the door open for the following user; they look at each other, smile at each other, understand each other but don't say a word. It is a kind of consumer guerrilla.

In a high-tech store, two customers have been waiting for an employee. The second customer in turn looks very impatient. Both customers smile at each other as a token of non rivalry. The computer the first customer wants to buy is out of stock; only the computer on the display shelf is left. He asks for a price reduction. Both customers know that the employee can grant a price reduction, because both customers have the knowledge of Management, both have been loyal clients for many years and both have already benefited from price reductions. The second customer starts supporting the first one against the shop assistant; both clients spontaneously form a league against the salesman to get a price reduction, (relationship of solidarity).

A group of customers is waiting for a very famous French chocolate maker to open the store. The chocolate trade mark is well known on an international scale. An employee opens the metal gate and unlocks the glass door, but looks down upon customers and doesn't say anything to them (neither «good morning», nor « we are opening shortly »; « sorry for the wait »). Two customers start up a conversation to criticize and comment on this non-commercial behaviour and this service failure from such a famous company, (relationship of consolation).

C to C relationships of *complicity* for another customer: At a veterinary clinic, a woman would like to adopt a cat for her mother whose cat died the previous month. The vet assistant answers that they have no pets for adoption but only pets for sale. A cat owner awaiting her turn tells the woman that a friend of hers is a member of an animal protection society and can help her. She phones her friend immediately, (Help provided to a customer to make up for a lack of service, and nevertheless a positive impact on the veterinary clinic image).

C to C relationships of *complicity* for the firm and for the customer: At a street market there is neither fitting room nor mirror. A woman is keen on a jacket but

cannot try it on, nor look at herself. She is about to put the jacket back on the stall, when another woman offers to give her point of view. The woman puts the jacket on; it suits her very well and her fellow customer tells her so. Then a third woman enters the conversation and approves the first customer's viewpoint; she tells the woman that she makes a good choice (the salesman and the customer are satisfied; the salesman makes a profitable transaction all the more so since he has neither exerted himself, nor provided the equipment).

Relationships of *complicity* may also become established without any service failure. Relationships of *complicity* have another function, they amplify customer satisfaction because they provide the customer with a higher degree of satisfaction than he expected. In this case, relationships of *complicity* can be spontaneous exchanges of pleasantries, or a service provided in common with the customer ('*co-production*'). They can generate emotions and have a positive impact on the service provider's image.

Examples of Relationships of *complicity* as customer satisfaction amplifier:

C to C relationships of *complicity* organized by the firm ('*co-production*'): At the "piano-bar" (cabaret), 50% of customers are "regulars"; most know each other well. Customers take part in the show, the singer (who is also the owner) asks them in turn to come to the stage and sing. Sometimes a customer (who is also one of the owner's friends) asks another customer to sing. Singing customers sing local songs or light music songs. Customers co-produce the show and take part in the service delivery. They all are linked with the local culture, norms, codes and humour. Between two songs the singer-boss hints at the social position of customers, at their former experience and encounters. Singing customers adapt the words of songs to the present context. Relationships of *complicity* are « institutionalized » and contribute to the service production.

C to C relationships of *complicity* against another customer: At the cash desk of a supermarket, a customer takes ages to fill up her bag; she is neither elderly nor a disabled. The cashier looks at the next customer, both understand each other and they exchange a smile.

The research brought forward the effects of *complicity*. From a social viewpoint, *complicity* acts as a cohesive and pacifying factor; *complicity* is a «non-declaration of war», of rivalry, of hostility. *Complicity* is contrary to a misunderstanding. In a purchase situation, relationships of *complicity* increase the likelihood of a purchase; they facilitate service and advice delivery. Relationships of *complicity* make people feel happy, generate a positive mood, a kind of magic, the effects of which are stronger than a smile. Relationships of *complicity* generate emotions.

5. DEFINITION AND MODEL OF COMPLICITY

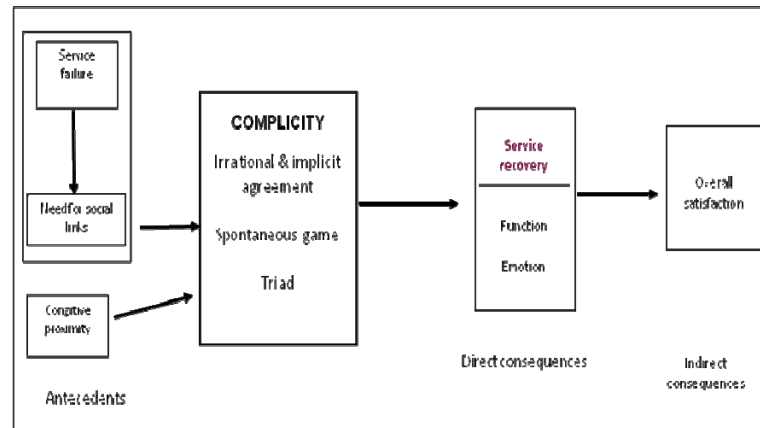
5.1. Definition

The definition of *complicity* in a servicescape is posited: *The relationship of complicity is a close social relationship between customers, likely to improve customer satisfaction when the service is correctly delivered, or likely to make up for a breakdown or a failure in service delivery. The relationship of complicity takes the form of consumer reactive coalitions for or against a third party and is a source of value for the customer and for the firm. Relationships of complicity are determined by attitudes and behaviours* (Antonini, 2006a, 2006b; Antonini, 2007; Ferrandez et al., 2008). This definition of complicity is the first, in the fields of Service Marketing and represents potential management tools to make up for a service failure. In the 2009 version, the satisfaction amplifying effect has been removed (Antonini, 2009).

5.2. Conceptual model of complicity in a service environment

The most salient components of complicity have been kept as dimensions: agreement, irrationality, unspoken elements (implicit dimension), spontaneity, game and triad. The model posits complicity as a tri dimensional element: an irrational and implicit agreement, a spontaneous game and a triad. The objective is to determine to what extent complicity can take the form of the reactive behaviour of a coalition between clients and which, in the manner of, other compartments such as of trust and loyalty may act upon the consumer and the enterprise.

FIGURE 1: CONCEPTUAL MODEL OF RELATIONSHIPS OF COMPLICITY



Complicity is triggered by a service incident together with a need for human contact and cognitive proximity. The consequences are a functional and an emotional palliative action.

A service incident entails a need for human contact. The need for human contact following an incident has a positive and direct influence on the formation of a relationship of complicity between strangers. There is a positive causal relationship between the cognitive proximity of the participants in a context of service deficiency and the relationship of complicity. Complicity has a direct and positive effect upon functional service recovery. Complicity has a direct and positive effect upon the emotional service recovery. The emotional service recovery has a direct and positive impact upon the overall satisfaction.

6. DISCUSSION AND FURTHER RESEARCH

6.1. Discussion

It can be asserted that customers commit themselves to genuine relationships of *complicity* because the interactions observed contain all the key components given in the first section. Relationships of complicity are triggered off by a break-down or a failure in service delivery, these are mainly: a failure in control, a failure involving contact personnel and a failure or insufficiency in the physical environment.

It also can be asserted that relationships of complicity between customers are a social fact which corresponds to a service recovery strategy or a customer satisfaction amplifier, (according to Oliver's Disconfirmation of Expectations Paradigm, 1980). They take the form of spontaneous reactions and service failure corrections or service recovery strategies, based upon help, compassion, games and temporization. The customer makes up for a service failure by himself / herself, either because the firm has no service recovery function or because it takes time to set up.

Relationships of *complicity* do have an impact on firms. These may be positive or negative impacts, in terms of corporate image or profit. This service recovery strategy is carried out by the customer himself though normally this should be within the firm's responsibility as a response to a service failure on its part. Relationships of complicity do have an impact on firms without spending money in a service recovery function.

This service recovery strategy is carried out by the customer himself / herself, though normally this should be within the firm's responsibility as a response to a service failure on its part.

Companies should utilise the servicescape to foster relationships of *complicity* between customers, and reward customers who exhibit Relationships of *complicity* during special events, or unfavourable conditions.

6.2. Limits and further research

Relationships of *complicity* cannot be established in all type of service environment. Conditions need to be met, such as physical proximity, verbal interactions, waiting or leisure time, as well as, the agreement of participants to commit themselves to interpersonal interactions.

Similarly studies need to be carried out so as to enlarge our understanding of *complicity*, to endeavor to measure it, as well as its importance and influence. At this stage it is clear that measuring tools must be created and data must be collected and treated to validate a model of *complicity*.

NOTES

1. A complete literature review on this theme was conducted 2006 (Antonini, 2006a).

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THE DEMOGRAPHIC TRENDS OF THE NEW GENERATION IN
RELATION TO THE ACCOMMODATION OPERATION SERVICES:
THE CASE OF CYPRUS

MARIOS CHARALAMBOUS*

ABSTRACT

It is widely known that the trends of consumers in relation to the hospitality and tourism services, in general, are constantly changing as people of all ages and especially the new generations, seek to engage in new and diversified services and experiences as well as to be provided with updated services.

Taking this into consideration the current survey research focuses on examining the demographic trends of the New Generations in relation to the hospitality services in generally, and more specifically to the Accommodation operation services, as these are being applied in the case of Cyprus. In more specific, the research attempts to investigate which are the trends and most importantly which are the demands and needs of the New Generations in relation to the Accommodation operation services in Cyprus. It should be noted in this case that the research aims to investigate the topic focusing on people of the age of 18-25 years old. More intensively it obtains and exemplifies data in relation to the topic through a primary survey using quantitative research. Through the integration, the research explains and highlights that indeed there are new trends arising in relation to the Accommodation operation services from the New Generations. Finally, the research concludes that in Cyprus the Hotels Services should be upgraded and updated so as to meet the demands of the New Generations.

Keywords: Demographic Trends; New Generation; Accommodation Operation Services; Cyprus.

1. INTRODUCTION

The Hospitality Sector plays a significant role in the economic development of many destinations. Cyprus, a small island in the Mediterranean Sea, is one of these countries, which is highly depended on the hospitality and tourism sector in terms of its economic growth.

The concept of the survey research is to investigate through a primary survey the demographic trends of the new generations and more specifically of people in the age of 18-25 years old in relation to the Accommodation operation services as these are being applied in the case of Cyprus.

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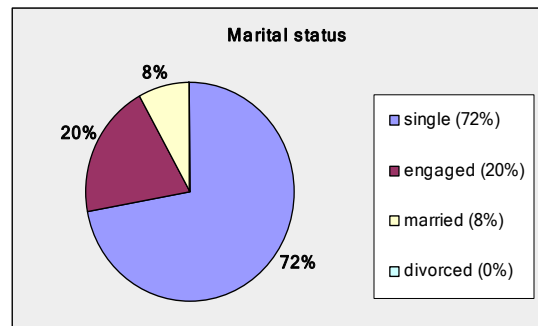
2. METHODOLOGY

The survey research conducts a primary data collection method which includes mostly questionnaires. The purpose of choosing this technique is to fulfill the research's objective in terms of examining the new trends of young people in the age of 18-25 years old in relation to the Accommodation operation services as these are being applied in the case of Cyprus. Consequently, the questionnaires have been addressed at a representative sample of young people in the age of 18-25 years old. The potential participants have been chosen based on their age. Finally, where necessary the research compared the primary research results with some literature.

3. GENERAL INFORMATION OF YOUNG CYPRIOTS

Before beginning with the main object of the research, first it is important to refer to the demographic characteristics of the researched people in the age of 18-25. From the results (Figure 1) it is shown that the majority of respondents (72%) are single and just a 20% are engaged. It is noticeable the fact that people in their young age are getting married (8%). Based on this fact it can be assumed that the trends of those married people in the young age may be different from those who are single in relation to the demands for accommodation services. There is a limitation of the research in investigating such a factor, as it is not on its major considerations, but at the same time it gives recommendations for further research on this topic.

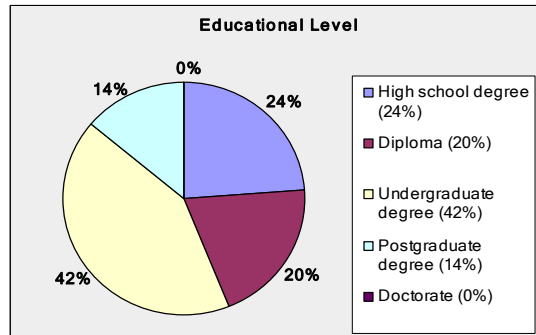
FIGURE 1: MARITAL STATUS



Continuing to the demographics of the new generations in the age of 18-25 years old and in relation to their educational level, 42% of respondents have obtained an Undergraduate degree or at least they are still following their Undergraduate studies and a 20% have completed a Diploma degree. It can be believed that the effects of these data may depend on the gender of the respondents as young ladies have the

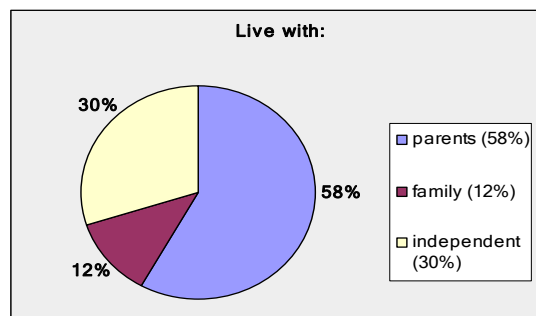
ability to continue their studies from High school but young boys have to attend the army for an average of two years. Also, it is obvious that a 24% of respondents obtained only a High school degree, a fact showing that new generations are not attending further studies. On one hand this allows young people to have more free time to visit accommodation operation, but on the other hand they miss the prospect to enhance their knowledge and create a career for the future. Finally, it is rational that none of the respondents acquired a Doctorate degree due to the young of their age.

FIGURE 2: EDUCATIONAL LEVEL



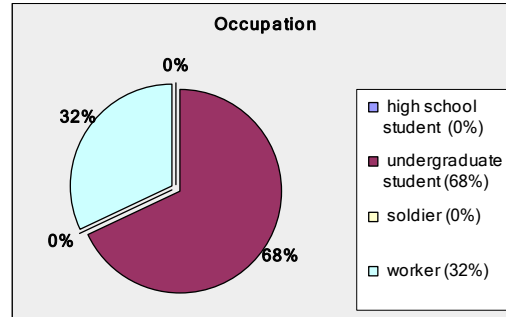
In reference to the question of “who you live with?” more that half (58%) of respondents in the age of 18-25 years old live with their parents and a relatively high percentage (30%) are independent. This detail gives the impression that those independents in the young age may have more time and flexibility to do whatever they want and they are more likely to habitually use accommodation operation services. Finally a decent percentage (12%) refers to those who live with their own family, as the pre-mentioned data have shown there are some who are married in their young age.

FIGURE 3: LIVE WITH



Looking further at the demographic characteristics of the population of Cyprus in the age of 18-25 years old and in relation to their occupation, as it is seen from the data the majority of them (68%) are Undergraduate students and the rest are being employed (32%). Once more the research comes to the point where an enormous number of young people prefer to work rather than continuing their studies further. Finally, it is remarkable the fact that none of the respondents is a High School student or a soldier.

FIGURE 4: OCCUPATION

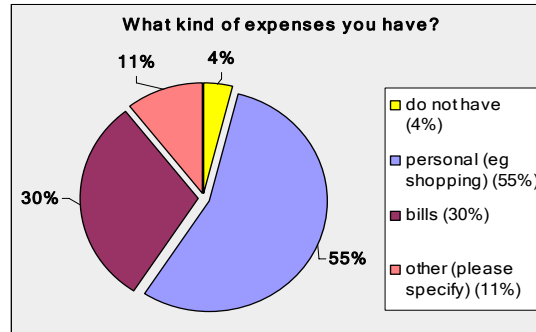


In terms of the expenses that young people have, even in the age of the 18-25 years old, it can be referred to mostly personal expenses (55%). A less percentage counts for those who have bill expenses (30%) and this is rational since there is a high percentage of young people who are independent and leave alone. Further, only a 4% of respondents note that they do not have any expenses and 11% refer to other expenses, which eventually can be considered as personal expenses. Such expenses are for cigarettes, gas, loans, rent and medical expenses. Generally it is outstanding the fact that young people have a lot of expenses and despite this, they decide to be independent. Based on this, the research can justify the fact that young people prefer to be employed rather than continuing further their studies. Another arising point is the fact that there is nothing mentioned about expenses for travelling and visiting accommodation operations.

Moving deeper to the main point of the research and in the attempt to investigate the demographic trends of the new generations towards the accommodation operation services, the research finds it important first to study what kind of hobbies young people undertake during their free time. First of all it is remarkable the fact that 88% of respondents have free time and only 12% are not. Unfortunately there is not any reference to the reasons why young people do not have free time. The research gives a justification that maybe this is due to the fact that a high percentage consists of

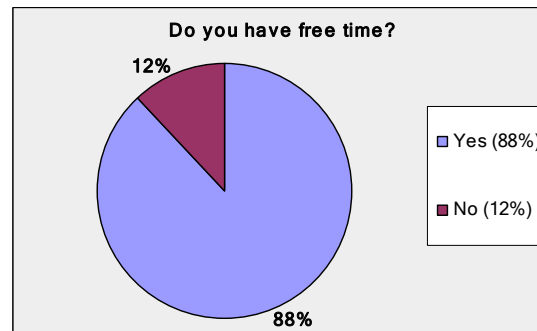
Undergraduate students who spend a lot of time for their studies or even those who are already married and have a lot of household obligations.

FIGURE 5: EXPENSES



On the other hand, researching on what their hobbies are during free time, there is a variety of options given; most of young people prefer to go out, fewer go to the gym and explore the internet, less are listening to music and watching TV, a fewer number of young people are reading books, go for games, swimming and visiting cafes, and the rest are undertaking other activities during free time as playing all kinds of sports, cooking, painting, going to cinema, shopping, taking pictures, sleeping, dancing and visiting clubs. The number of those who are traveling is even less and that means that either they stay at their country for vacations or they do not have vacations at all.

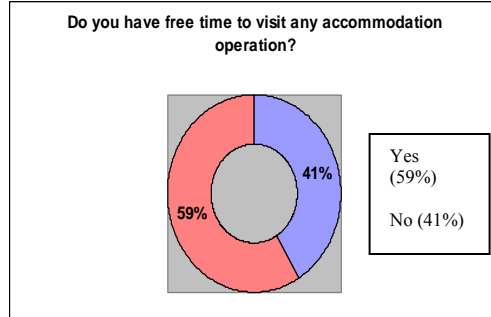
FIGURE 6: FREE TIME



However, in the question whether they have free time to visit accommodation operations, more than half of the respondents answer positively (59%) regardless the fact that there is nothing mentioned above that visiting accommodation operation is a

hobby for young people in the age of 18-25 years old. It can be understood that either they do not consider visiting accommodation operations as a hobby or just it is not the greatest of their hobbies.

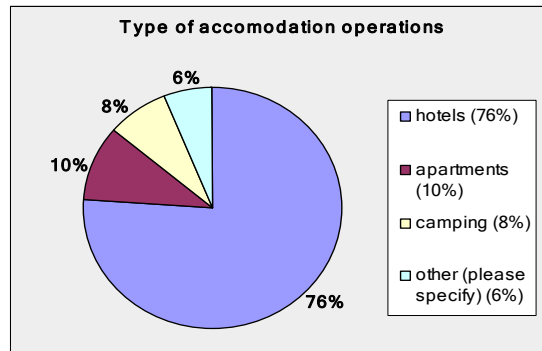
FIGURE 7: FREE TIME TO VISIT ANY ACCOMMODATION OPERATION



4. ACCOMMODATION OPERATION SERVICES

In the frames of investigating the demographic trends of new generations in the age of 18-25 years old in relation to the accommodation operation services, participants refer to the type of accommodation services which they choose or wish to visit. Based on Figure 8, 76% prefer mostly hotels, a very little percentage is visiting apartments (10%) and 8% prefer camping accommodation operations. In the option of others, a percentage of 6% refers to those that do not like to visit any accommodation operations at all.

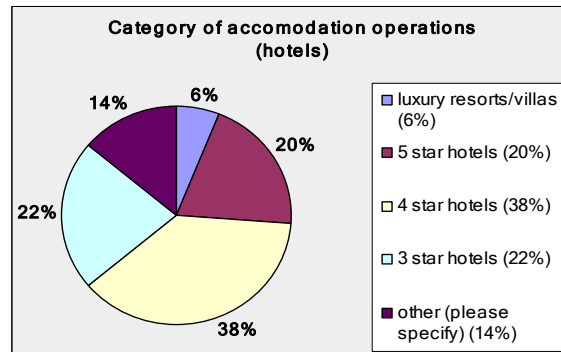
FIGURE 8: TYPE OF ACCOMMODATION OPERATIONS



In reference to the category of accommodation operations that young people prefer to visit and mostly regarding hotels, the majority of responses support 4 star hotels (38%), 22% prefer to visit 3 star hotels, and 20% are fans of 5 star hotels. A less percentage (6%) answers that prefers to visit luxury resorts and villas which are considered to be 'A' category accommodation operations. From the current results it is obvious that young people are willing to pay for visiting a highly regarded category of hotels rather than choosing a minimum category which anyhow are cheaper and offer less services and quality. Also the percentage of those who visit 5 star hotels is a bit high, but again this is being justified based on the fact that there are a lot of young people who are being employed, thus they have the money to pay for more quality and services in a 5 star hotel or even in a luxury resort. However, Daniel Gros (2010) in his research supports that young Cypriots do not have any specific preference in terms of accommodation, but as it is assumed "the price remains one of the first choice criteria".

Lastly, 14% of responses refer to those who simply do not have any specific requirement or even they do not visit any hotels at all.

FIGURE 9: CATEGORY OF ACCOMMODATION OPERATIONS



5. ACCOMMODATION OPERATIONS VISITED AND WISH TO BE VISITED ABROAD AND IN CYPRUS

To get a spherical viewpoint of the trends and personal preferences of young people when visiting accommodation operations, it is interesting to know which accommodation operations they have visited so far, which they seek to visit in the future and for what purposes. The following sections refer to the accommodation operations visited and wish to be visited abroad and in Cyprus among with the purpose of visitation.

Some of the referred accommodation operations visited abroad by young people are:

Barcelo Raval in Barcelona
Athens Diamond (4*)
Holiday Inn Express in London
ABC in Salonica
Alexander Beach Hotel & Village in Malia-Crete
Hilton in UK
Holiday Inn (4*) in USA
Four Seasons 5*
Golden Cost 4*
Sequoia Lodge in France

All of these hotels were visited in terms of vacations whereas two of the respondents have visited 5 and 4 star hotels for job obligations. There are another two who visited 4 & 3 star hotels because of low pricing, only one respondent visited a hotel on an organized package and two of respondents did not visit any hotel. There are five people who do not remember which hotels they have visited and only few who do not have any personal preference on the accommodation operations they visit. The research should refer also to the fact that 22 of respondents did not give any answer to the question “which accommodation operations you have visited abroad and for what reason?”

Some of the referred accommodations operations that young people wish to visit abroad are:

Burj Al Arab in Dubai (as mentioned it is unique)
Banyan Tree Hotels
Beach House in Maldives – exotic hotels
Le Prince Maurice in Mauritius – exotic hotels
Ice Hotel in Sweden
Four Seasons
Four Seasons in Nepal
Hilton (5*)
Le Meridien (5*)

Most of the respondents wish to visit the pre-mentioned hotels mostly for holidays and also for experiencing alternative services as there is a high interest for luxurious hotels with a concept and also for exotic places. Only one person has a particular preference to visit Spa Hotels in the future, two people wish to visit luxurious operations and some others wish to visit mostly 5 star accommodation operations. Finally there are 5 people who answered that they do not know which operations they wish to visit, one does not wish to visit any operation and one does not have any personal preference.

From the above results it is obvious that young people are highly educated in terms of the different alternative types of hotels that exist and which offer unique experiences. Though, the most important fact is that they give the impression that they can afford to visit such types of hotels and when they decide to visit any accommodation operation their main concern is to be provided with quality rather than being interested in cheap and with no quality hotels.

The research finally should note that 23 of respondents did not give any answer to the question “which accommodation operations you wish to visit abroad and for what reason?”

Some of the referred accommodation operations visited in Cyprus by young people are:

- Four Seasons in Limassol (5*)
- Giannis Hotel in Omodos village
- Le Meridien in Limassol (5*)
- Golden Bay
- Makris Hotel in Kakopetria village
- Forest Park Hotel in Agros village (4*)
- Pafiana Heights Resort & Spa in Pafos
- Ekali Hotel in Kakopetria village (4*)
- Rodon Hotel in Agros village (4*)
- Mediterranean Hotel in Limassol
- Palm Beach 4*, (for job)
- Olympic Lagoon Resort in Ayia Napa for job
- Golden Coast in Protara (for job)
- Aphrodite Hills
- Alexander the Great
- Napa Mermaid in Ayia Napa
- Grecian Park in Ayia Napa
- Amathus Hotel (5*)

From the above information once more the research comes to the result that young people prefer to have alternative experiences and to visit accommodation operations with a concept and more importantly operations with high standards and quality. Another consideration is that there are a lot of respondents who visited accommodation operations on village sites, a factor that shows again that young people look for alternatives, as so far it was believed that young people visit mostly beach areas and particularly Ayia Napa which is considered to be popular for young clientele also for clubbing (Cyprus Tourist Office, 2011). Still few are referring to hotels in Ayia Napa.

In general terms, young people have visited mostly 5 and 4 star accommodation operations in Cyprus, only few have visited 3 star accommodation operations, one

person have visited an apartment operation for vacations and 25 of respondents did not give any answer.

Some of the referred accommodations operations that young people wish to visit in Cyprus are:

- Aphrodite Hills Resort
- Saint George Hotel
- Amathus Hotel (to be employed)
- Four Seasons (to be employed)
- Almyra Hotel for relaxation
- Capo Bay Hotel for relaxation
- Thalassa Boutique Hotel & Spa for relaxation
- e-Hotel in Larnaca
- Four Seasons Hotel
- Ayii Anargyri Spa & Resort
- Four Season (as mentioned there is quality)
- Lordos Hotel
- Anabelle Hotel
- Elysium Hotel

Also there is reference by few who wish to visit 5 star hotels and luxury resorts in Cyprus whereas one states that specifically wishes to visit accommodation operations with spa facilities giving examples of the Ayii Anargyri Spa & Resort and the Casale Panayiotis Spa Resort in Kalopanagiotis village. Also six of the respondents declare that they do not know which accommodation operation wish to visit in Cyprus or even they do not have any personal preference. Finally only one person mentions that do not wish to visit any accommodation operation at all and 25 did not give any answer.

It is needless to mention, at this point of the research that young peoples' preferences are sustained in terms of visiting accommodation operations both abroad and in Cyprus which offer quality, have a concept and offer alternative services and experiences. Finally the research brings to a close all over again the fact that young people in the age of 18-25 years old have an excellent knowledge of the existence of specific hotels that match their personal preferences.

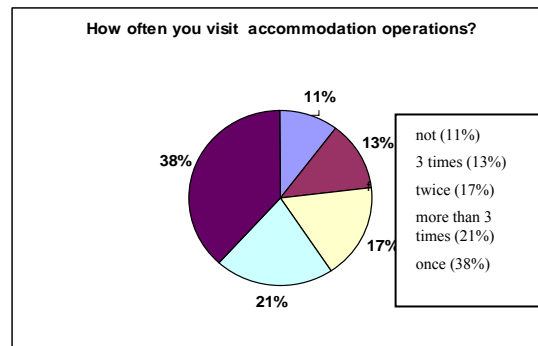
6. GENERAL DEMANDS FOR ACCOMMODATIONS OPERATIONS

6.1. Frequency

Continuing with the main point of the research, young people have been asked how often they visit any accommodation operations every year. The majority of them (38%) visit accommodation operations only once, less percentage (21%) visit accommodation operations more than 3 times, 17% visit accommodation operations

twice and 13% three times. outstanding is the fact that 11% do not visit any accommodation operations at all. This is understandable as in general there is a proportion of people who do not like to go away from their homes and stay anywhere else, either because they do not feel secure moving away, or they do not have the money or the time or even because they just do not have the demand to visit any accommodation operation.

FIGURE 10: FREQUENCY



6.2. Motivation

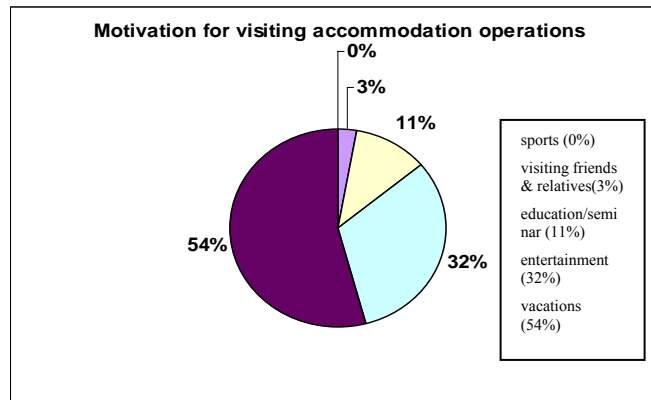
Regarding the main motivations of young people to visit any accommodation operation, more than half (54%) go for vacations and 32% visit hotels due to the entertainment services they are offering. This is a factor that again shows their interest for themed accommodation operations as they offer specific entertainment services.

The remaining percentages go for those who visit accommodation operations for education/seminar purposes (11%) and only a 3% have as a motivation to visit friends and relatives. All in all there is no response to the choice of sports as a motivation for visiting accommodation operations, while during investigating their hobbies most of them they were undertaking all kinds of sports.

6.3. Source of payment

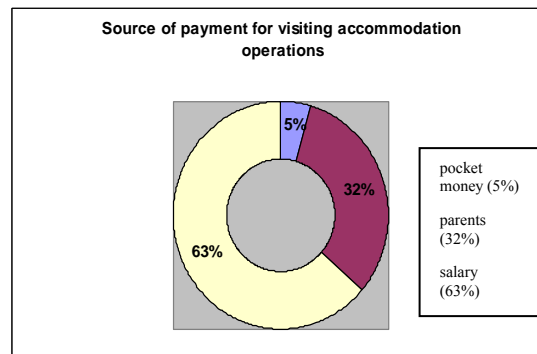
In search of the source of payment for visiting accommodation operations, young people mostly get the money from their own salary (63%) and this is lucid as there is a high percentage of those who are being employed (32%, see Figure 4, p.152). Another 32% states that their parents pay for their visitation at accommodation operations and the remaining 5% refers to those you use as a source of payment their pocket money.

FIGURE 11: MOTIVATION



At any rate, the current research comes to the point that young people, even if they are employed, or students, staying with their parents or alone or with their own family, they find the ways and the money so as to visit any accommodation operation. Though, this comes in contrast to the fact that young Cypriots continue to depend on their parents' financial assistance (Daniel Gros, 2010).

FIGURE 12: SOURCE OF PAYMENT



6.4. Source of information

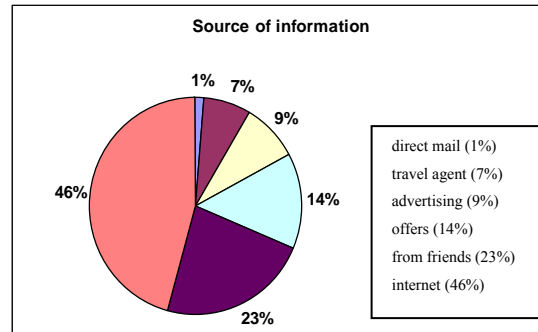
In the attempt of researching what source of information young people use for making their bookings at or even collecting information for any accommodation operation, the internet is the most commonly used method (46%). Since previously the research came to the point that not a lot of young people are using the internet frequently on their daily life, at this point it becomes useful. It is well known that in

the accommodation industry, and in any other related industry, the use of internet is growing and being upgraded dramatically in the same rate as the industry is improving. This is rational as the internet and in general technology is constantly upgrading and became part of peoples' life.

Indeed this information confirms the fact that the internet is the most useful tool for collecting information and making bookings, especially for young people who have the time to search for any information. In contrast with elderly people, who prefer to visit travel agencies for planning for their holidays, as they do not have the knowledge, time and access for using the internet.

Another 23% rely on their friends' viewpoint about accommodation operations, the so called 'word of mouth', the strongest method of collecting information and becoming familiar for the services that a business is offering in general. The research can assume that this is the reason why the majority of young people choose to visit high quality accommodation operations. The remaining percentage counts for offers as a source of information (14%), advertising (9%), travel agent (7%) and direct mail (1%).

FIGURE 13: SOURCE OF INFORMATION



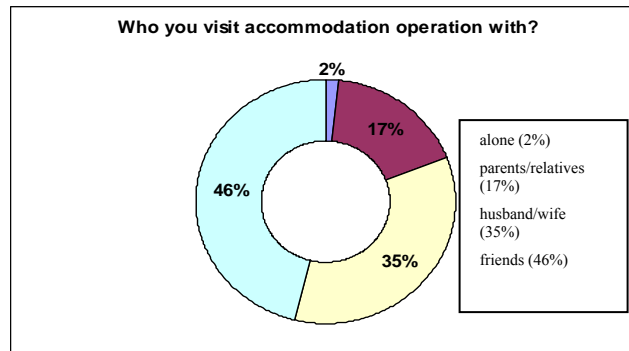
6.5. Accompaniment

In regards to who young people visit any accommodation operation with, most of them (46%) go with their friends and 35% with their spouse. Only 17% visit any accommodation operation with their parents or relatives. Even if the majority of young people live with their parents and fewer are independent (see Figure 3, p.151), still more are visiting accommodation operations with their friends and less with their parents. Furthermore, it is marvelous the fact that those who are married in their young age they choose to visit accommodation operations with their spouse rather than with friends. Such a factor points out that young people are mature enough as they make the decision to get married and follow their other half on vacations. There is finally a

small percentage (2%) of those of are visiting accommodation operations alone and this is something inexplicable as new generations are considered to be energetic and having fun with friends. As Vasos Tsiakkeros (2004) supports “the Cypriots’ life is more fun and enjoyable”.

Finally, the research makes its own conclusion that maybe those are the people who seek visiting accommodation operations for relaxation, as there is some previous mentioning on this motivation for visiting accommodation operations.

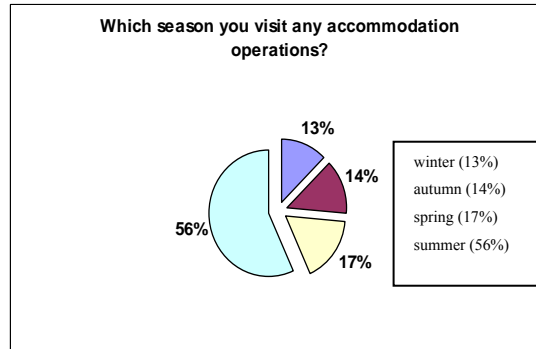
FIGURE 14: ACCOMPANIMENT



6.6. Season

Regarding the season that young people choose to visit any accommodation operation, as it is shown, 56% set off during summer time and 17% during spring. This is rational as most of vacations that young people take are during the peak season as they want to interact with other people, be entertained and have extraordinary experiences. The remaining percentage goes for those who go off during autumn (14%) and winter (13%) relatively a high percentage for both seasons, but as seen previously, young people also seek for relaxation and thus visit village resorts which are more preferable during autumn and winter times.

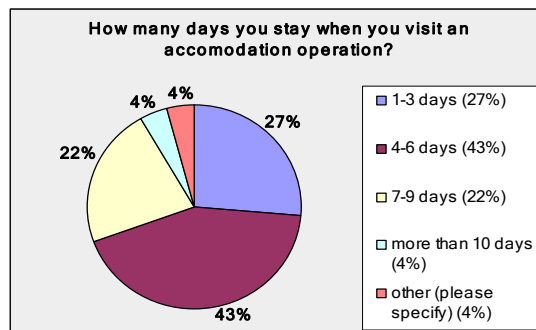
FIGURE 15: SEASON



6.7. Length of stay

Looking at how many days young people stay at any accommodation operation, most of them (43%) stay for 4-6 days, 27% for 1-3 days, 22% for 7-9 days and a fewer percentage of those who stay for more than 10 days (4%). The remaining 4% counts for those who possessed a different option, but still they did not give any specification. On this issue, there is a study which concludes that in general the population of Cyprus has as an average length of stay between 5 to 8 days (Daniel Gros, 2010). The results are more or less the same for young people, but it can be assumed that they prefer to stay at any accommodation operation for fewer days so as to visit as many accommodation operations as possible.

FIGURE 16: LENGTH OF STAY



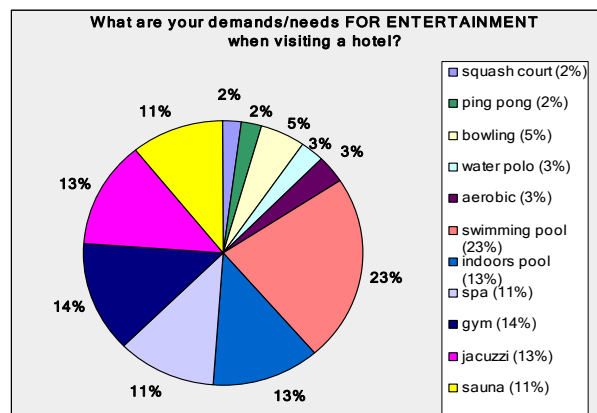
7. DEMANDS AND NEEDS FOR ACCOMMODATION OPERATIONS

7.1. Entertainment

Moving to the main point and in regards of the trends of young people in the age of 18-25 the research's main objective is to study their demands and needs in terms of the services offered by the accommodation operations they visit. In this section the research mostly presents the data as they have been collected and gives some further explanation only where is necessary. Then, the results presented give recommendations and can be used by accommodation operators so as to improve their services based on the needs of young clientele.

First looking at the demands and needs for entertainment facilities, most of the respondents answer that they seek the operation to offer swimming pool (23%) and 14% look for gym facilities. An additional 13% refers to those who expect to find Jacuzzi and indoor pool facilities and 11% need sauna and spa facilities. The remaining percentage goes for bowling (5%), water polo and aerobics (3%) and the remaining 2% counts for the need of a squash court and ping pong.

FIGURE 17: ENTERTAINMENT FACILITIES



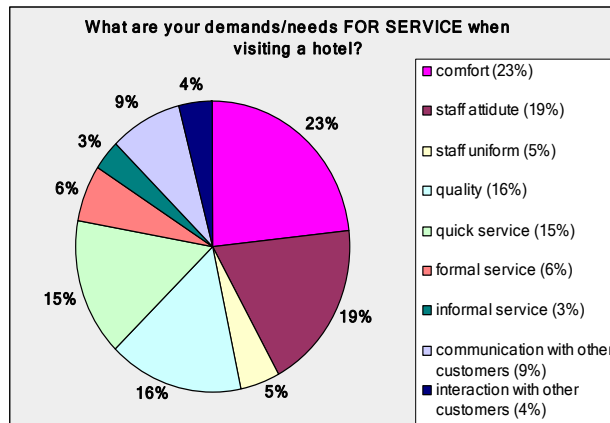
7.2. Service

In terms of service, when visiting an accommodation operation young people seek to be provided mostly with comfort (23%), the next most important service is the staff attitude (19%) and finally 16% seek to find quality. A 15% of respondents prefer quick service and for a minimum percentage (9%) young people demand to experience communication with other customers. Only 6% seeks for formal service and a 5%

wants the staff to wear a uniform. The remaining percentage counts for those who need to be interacted with other customers (4%) and those who support the informal service provision (3%).

From the results it is obvious that the trend of young people when visiting accommodation operations is mostly to be provided with comfort and quality, less with quick service and even less with informal service. It should be noted though that to which extend communication with other customers and the staff uniform are important services for young people, is under additional examination on the next figures.

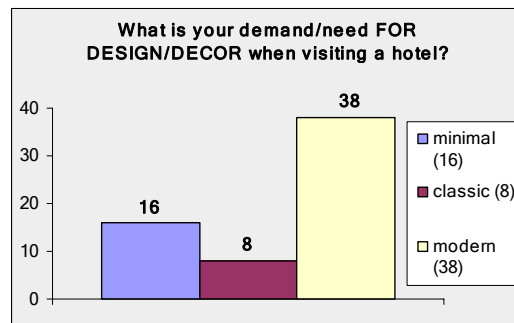
FIGURE 18: SERVICE



7.3. Design/Decor

As far as the demand of young people for the design and decor is concerned, most of respondents seek a modern design whereas a minimum number look for a minimal design and fewer go for a classic design. It is obvious that there is a proportion of young people who are followers of the old fashion, but still it is lucid that most prefer a modern design of the accommodation operation they are visiting.

FIGURE 19: DESIGN/DECOR

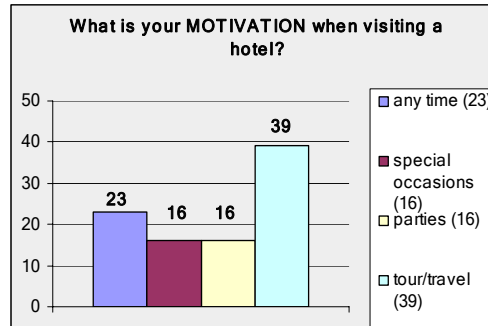


7.4. Motivation

Through the whole research there is some reference regarding the motivation of young people to visit any accommodation operation. So far, most of the conclusions show that young people visit accommodation operations for vacations and entertainment (see Figure 11, p. 159) and only few as part of their job obligations. In giving full meaning to this, the following data show that the greatest part of respondents visit accommodation operations as part of their travel and in the same count they have as a motivation special occasions and parties. This information justifies, as mentioned before, the choice of young people to visit accommodation operations which offer specific services mostly in terms of entertainment and alternative services such as spa. Not only this, but also Daniel Gros (2010) comes to confirm that “young people like meet other young people, entertainment, parties and festivals”. In the same way, Vasos Tsiakkiros (2004) agrees that one thing that Cypriots like to do is to spend their money for fun such as going out in the nightclubs, for holidays and for relaxation no matter how old they are.

Finally 23 of the contributors, support that they visit accommodation operations at any time, meaning that they do not have any personal preference, they are just acting spontaneously.

FIGURE 20: MOTIVATION



7.5. Transportation

Moving further, there is reference to the transportation means that young people are using in terms of reaching an accommodation operation. Most of them are using a car, less a bus and just a few uses taxi services. This issue is of vast consideration as it is well known that transportation is limited for tourists, even for domestic travel in Cyprus. This is an alert for both apposite organizations to improve the existing transportation system and at the same time for accommodation operations to provide further services in terms of transportation as part of their services. Such an improvement will give the opportunity to young people and visit more habitually accommodation operations and especially those which are difficult to be accessed.

7.6. Amenities

Moving further to the demands and needs of young people towards the services offered when visiting any accommodation operation, the current section refers to the amenities available at an accommodation operation. As it appears, the majority of young people (21%) have as a major demand cloth/shoe shops and then souvenir shops (20%). Further to their priorities, in the same percentage comes the need for technology/music shops and sports shops (13%). A relatively high percentage (11%) looks for hairdressing salons, these may be more appealing to females, and finally 9% goes for book shops, 8% for libraries and 5% for jewelry shops.

A new aspect here is the interest of young people to be provided with literary services something that it is not a trend nowadays in accommodation operations. So this is a factor that accommodation operations need to take into consideration in their efforts to upgrade their services and in their need to offer services that satisfy the new generations.

FIGURE 21: TRANSPORTATION

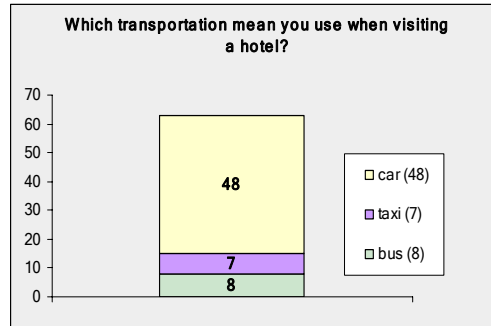
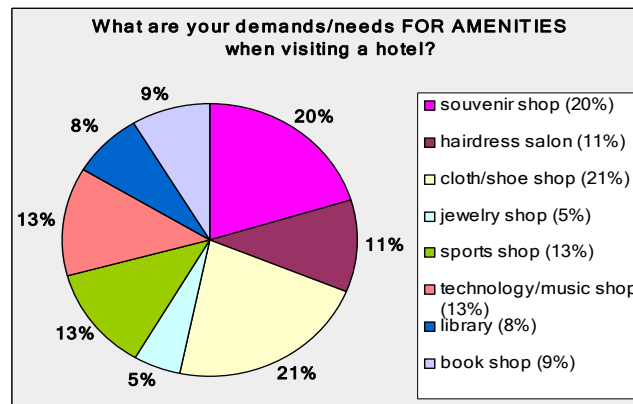


FIGURE 22: AMENITIES

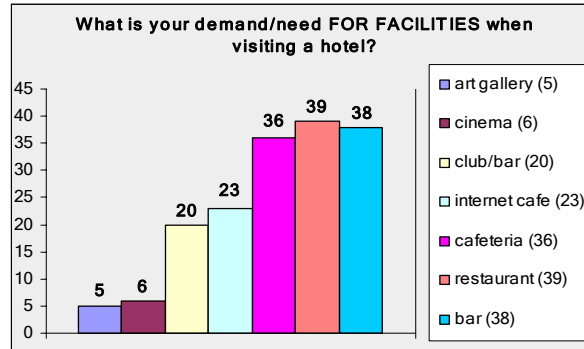


7.7. Facilities

In the section of what the demands and needs of young people are when visiting an accommodation operation and in terms of the facilities offered, the priority goes first on the restaurants, bars and cafeterias; besides this is how young people are being entertained. Such facilities are anyway being offered in any accommodations operation, but the research suspicions of whether the services offered in restaurants, bars and cafeterias are such that meet the changing demands of young people. Based on this, the research makes it familiar that there is a further investigation which concentrates mostly on the services offered in restaurants, bars and cafeterias and which is under completion.

Finally, there is a less concern for an internet café available and this can be justified as young people are not using the internet frequently enough especially when on vacations and an even less interest for clubs. The least significant of facilities is for art galleries and cinemas.

FIGURE 23: FACILITIES

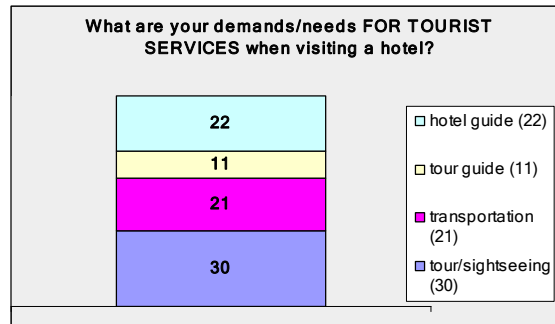


7.8. Tourist Services

Moving on with the demand for tourist services, the results show that the majority of young people desire to be provided with tour/sightseeing services. On the same way they seek a hotel guide to be available and transportation services to be provided, a factor that confirms previous discussion on the need of accommodation operations to improve their transportation services.

Finally, on a minimum extend they are fancy to tour guide services, a service that is mostly being provided by hotels for attracting foreign tourists, on groups and especially for elderly people who are more likely to use them. Considering that young people, when visiting any accommodation operation are mostly independent and have specific requirements, still they are looking for tour guide services. This is another section that accommodation operations should consider for improvement so as to attract more young people in their operations.

FIGURE 24: TOURIST SERVICES

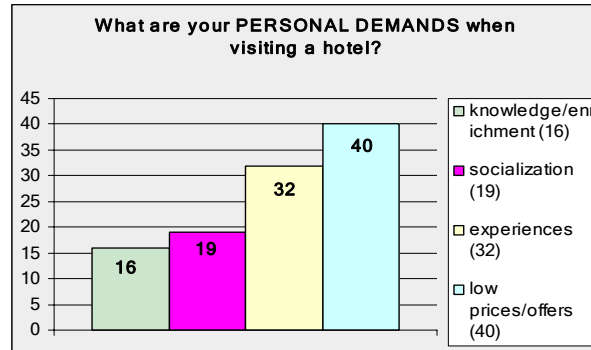


7.9. Personal demands

On the section of which are the personal demands of young people in the age of 18-25 years old when visiting any accommodation operation, the highest support goes on their demand to visit accommodation operations on low prices. This is a factor that comes in contrast with the whole results, as the research so far concludes that young people are moving away from the traditional demand of cheap accommodation and they are now looking for quality and high class services. It can be assumed though that the demand of young people is for accommodation operations to minimize their prices so as to give motivation for more visitations or even to provide more offers that will attract their interest. The demand of visiting high category accommodation operations exists and is vast; accommodation operators then have to take advantage of it in the most effective way by providing what is demanded. Another point of view based on this issue is that of Daniel Gros (2010) who noted in his research that “the sensitivity to price varies with age: very high for students, unemployed and new workers; less strong for employed”.

Further to their personal demands, young people seek to expand their experiences in terms of visiting as many accommodation operations as possible. On a less extend young people when visiting any accommodation operation desire to be socialized, that means that they want to interact with other people and on the minimum extend they seek to be educated and enrich their knowledge in terms of accommodation operations and their services. This is a factor that is being proved from the data collected so far, as the research sustainably concludes that young people have an excellent knowledge on the existence of different types of accommodation operations, the services offered and they choose the ones that meets the most of their demands.

FIGURE 25: PERSONAL DEMANDS



7.10. Technology/Entertainment in hotel's room

Moving forward, the research lays a hand on an important issue arising is relation to the accommodation industry, that of technology as a service offered for entertainment in hotels' room. So, from the whole variety of options, it seems that the majority of respondents are supporters of the satellite TV (18%), a less percentage seeks for Wi-Fi access (16%), another 14% endorse that computer access is the most important entertainment facility in terms of technology in the room and a 13% go for radio/music channels. Furthermore, on almost the same percentage young people find it important to be provided in the hotel room with movie channels (9%) and DVD players (8%). Finally, on the same extend respondents demand table and video games (5%), CD players (4%), play station console (3%), Xbox console and Wii console (2%) and Nintendo console (1%).

From the above data it is noticeable the fact that once more young people do not consider as the most important of technological facilities the internet, but rather they have as a priority of demands a satellite TV in their hotel room.

7.11. Bath facilities in hotel's room

In a more detailed way, the research attempts also to investigate the most important bath facilities that young people need to be provided within a hotel's room. it is observable that the perception of the bath facilities provided in a hotel's room are almost the same as 15% support that shampoos is the most important of bath facilities, 14% bear that Jacuzzi and bath tab is of less importance and in the same percentage respondents find that shower gel, soap and shower bath are of even less importance (13%). Finally another 10% support that tooth brush/paste is an important bath facility

in a hotel's room and the remaining 8% goes for the least important bath facility, the bath net.

FIGURE 26: TECHNOLOGY/ENTERTAINMENT IN HOTEL'S ROOM

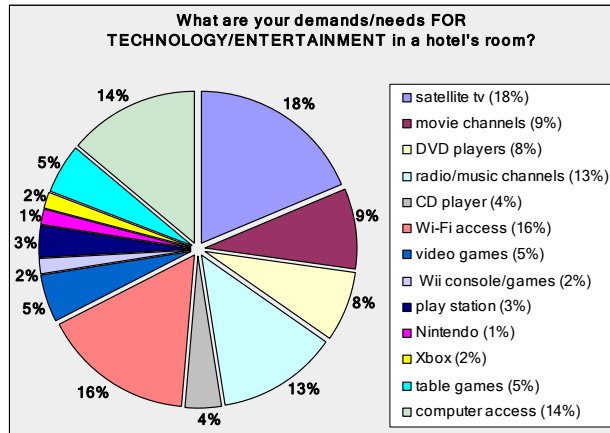
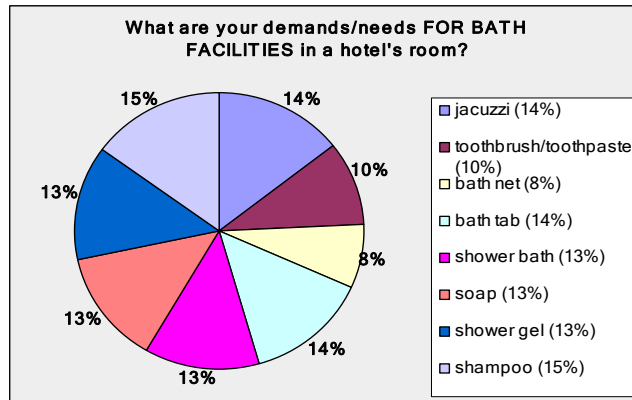


FIGURE 27: BATH FACILITIES IN HOTEL'S ROOM

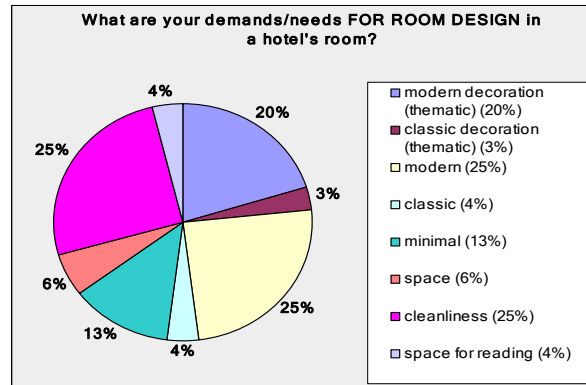


7.12. Room design in hotel's room

In consideration to the room design of the hotel that young people visit, it is apparent that the majority of them look mostly for cleanliness (25%), something that can be considered as part of the quality that they seek to be provided with at any accommodation operation they visit. Such a factor illustrates the great concern that young people have in terms of their hygiene and health. Additionally and on the same

length, 25% of respondents are attracted by a modern design of the hotel's room and more specifically a proportion supports a modern thematic decoration (20%). On minimum percentages young people prefer to go minimal (13%), some are concerned with the space provided in the room (6%) and from those some need space specifically for reading (4%). Finally, fewer are supporters of the classic decoration (4%) and a classic thematic decoration (3%).

FIGURE 28: ROOM DESIGN IN HOTEL'S ROOM



7.13. Food/Drinks in hotel's room

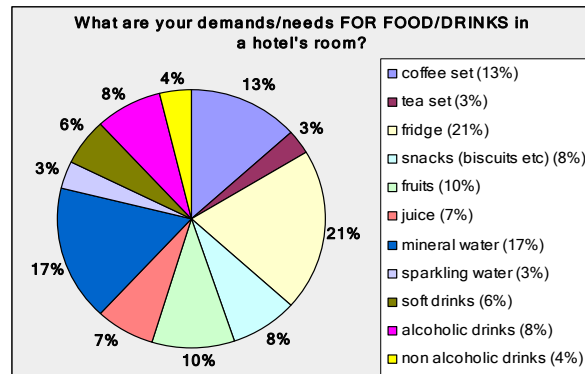
Another important issue that the research seeks to investigate in terms of the demands of young people when visiting any accommodation operation is that of the provision of food/drinks in the room. As it appears most of the respondents believe that it is important for a hotel room to have a fridge which offers a variety of food and drink items (21%). In reality, this is something that is offered in most of the high quality accommodation operations. Additionally, a 17% support that mineral water is the second most important facility, a factor showing that young people are concerned of their health since there are a lot of professionals who support that people should drink as much water as possible.

Another 13% goes for those who demand to be provided with coffee set facilities and 10% want the accommodation operation they visit to provide fruits in the room. Once more it seems that young people have a consideration on their health and instead of looking for unhealthy food items such as snacks, they prefer mostly healthy food items. Such a kind of food item is mostly provided in luxurious accommodation operations and mostly for customers who are loyal or for those who are celebrating something. So this is an alert for all accommodation operations which seek to upgrade

their services so as to be able and attract more and different groups of customers in their operations.

Moreover, there is a minimum percentage of those who support that alcoholic drinks and snacks should be provided in hotel rooms (8%) and this again shows that young people are concerned about their health. The remaining percentage goes on the provision of juices (7%), soft drinks (6%), non alcoholic drinks (4%) and finally for tea set and sparkling water (3%) facilities.

FIGURE 29: FOOD/DRINKS IN HOTEL'S ROOM

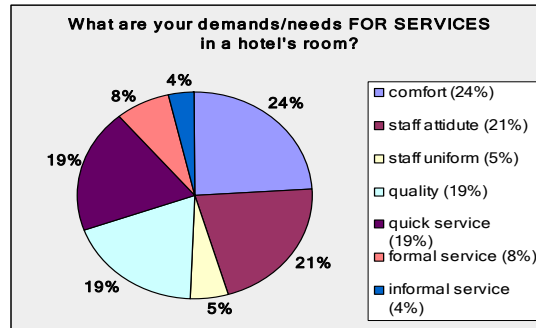


7.14. Service in hotel's room

For the research it is greatly important to look on the perception of young people in regards to the service provided in the hotel's room. The majority of them (24%) respond that the most important of services in a hotel's room is comfort and secondly the attitude of staff (21%). These data justify the preference of most of them to visit luxurious and of quality accommodation operations. On the same percentage young people find quick service and quality important factors regarding the service provided in the hotel's room (19%). On a less percentage young people support as additional important services in the hotel's room formal service (8%), staff uniform (5%) and informal service (4%).

Once more, it can be seen that the perceptions and demands of young people are sustained as the same results have been found in the case of the most important service provided by the hotel they visit (see Figure 18, p. 164). In both cases they give the highest of the importance to quality and then to the staff attitude and the rest follow in the same motive.

FIGURE 30: SERVICE IN HOTEL'S ROOM



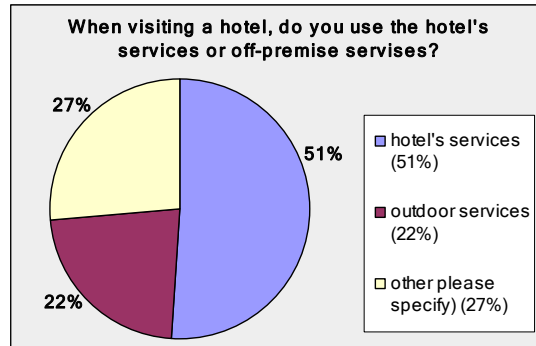
8. OTHER DEMANDS AND NEEDS FOR ACCOMMODATION OPERATIONS

8.1. On-premise or off-premise services

To conclude to the investigation of the demands and needs that young people encompass in terms of any accommodation operation they visit, the current sections illustrates some additional demands that they may have. At the beginning, young people have been asked whether they are using the hotel's services while at the hotel or if they prefer to use off-premise services and the majority of them respond that indeed they are using the services of the accommodation operation they visit (51%). Such a factor is extremely significant for accommodation operations as they are able to ensure their success and at the same time get the opportunity to upgrade their services so as to meet current demands, thus become more successful in the near future. On this factor, only 22% answer that are using off-premise facilities and 27% give an alternative option; they all mention that using hotel services or outside services depends on other factors. Firstly, on the reason of visiting the accommodation operation, secondly on what is offered on premises; if the services offered by the hotel are not satisfactory then they choose to use out of premise services, there are few who mention that using on-premise or off-premise services depends on the personal needs during the period of visiting the accommodation operation and finally others mention that this depends on the time available.

All in all, accommodation operations are not able to assure that all of their guests are going to use their services, but they are able to control their desire in using the services offered by providing as many as possible and always based on the demand of their guests.

FIGURE 31: INDOOR OR OUTDOOR SERVICES

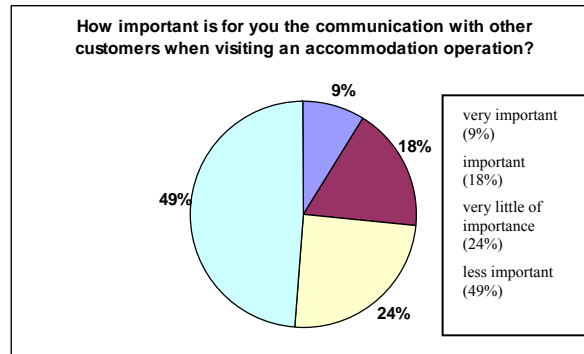


8.2. Communication with other customers

Based on previous data, for young people it is important to communicate and interact with other customers while visiting an accommodation operation and this is sometimes their motivation for visitation. The current section attempts to demonstrate to which extend this is important for young people. As it is shown, almost half of them (49%) support that this is of less importance while the minority (9%) believes that communication with other customers is of the greatest importance. In between these two extremes there are those who assume that this factor is of very little of importance (24%) and those find it just important (18%).

From the above results, the research comes to a general conclusion that even if young people find it important to communicate and interact with other customers while visiting an accommodation operation, this is not of their greatest concerns.

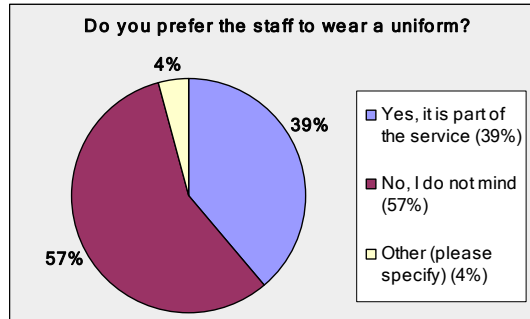
FIGURE 32: COMMUNICATION WITH OTHER CUSTOMERS



8.3. Staff uniform

In looking deeper to the preference of young people for the staff of the accommodation operation they visit to wear a uniform, the majority answer that is not important as they do not mind (57%) and 39% prefer the staff to wear a uniform because this is part of the service. Finally there is a 4% who mention that this should be applicable only in hotels and restaurants so as to separate the employees for the rest of people.

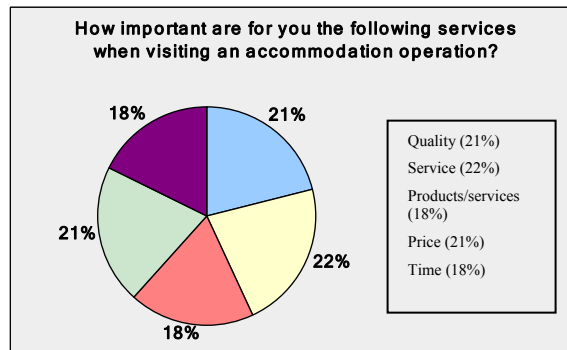
FIGURE 33: STAFF UNIFORM



8.4. Importance of services

In concluding to the whole research young people have been asked to notify which of the following services are the most important when visiting any accommodation operations. As shown, most of them have as a main concern the whole service provided (22%). The next most important services are the price and the quality (21%) and finally time and services offered are of less importance (18%).

FIGURE 34: IMPORTANCE OF SERVICES



9. ACCOMMODATION OPERATIONS OF THE FUTURE

As a final point to the whole survey research, respondents have been asked to give their opinion in terms of how they imagine the accommodation operations will be in the future. In this field there are a lot of options given and these give the opportunity to the accommodation operations of Cyprus to improve their services against the demands of young people.

Some of the mentioned elements given by the respondents refer to the offering of the most basic services in accommodation operations, such as clubs, bank services, internet and computer access in all rooms, some mentioned that they imagine the accommodation operations to be more upgraded and become more luxurious, with better prices, quality and staff in the future, some strongly believe that they should be minimal, with a theme or concept and not all inclusive. Few support that there should be more and alternative choices in terms of the accommodation operations available, for example camping accommodation services should be increased and available all year round. On the other hand, others imagine the accommodation operations to offer quick services. It is remarkable that one of the respondents imagines that there is going to be less staff which will be replaced by robots! In general the respondents estimate that in the future the accommodation operations services will be different and fantastic. Beyond the above, it should be noted that 31 of respondents did not give any answer.

10. CONCLUSIONS AND PLANS FOR FURTHER RESEARCH

As a conclusion and based on the whole survey research, the demands of young people when visiting any accommodation operation are controversial but there is a joint consideration; to be provided with such services that meet on the greatest extend their needs. New generations' demands are moving away from the traditional concept of "cheap accommodation services" and become fond of luxury and differentiation. They are willing to pay so as to meet their demands on the highest extend. Based on these factors, accommodation operations need to keep researching the changing demands of young people, but in all cases of all people who visit accommodation operations, so as to be able through improvement of services to satisfy them. The current research gives reliable information about the demands and needs of young people especially in the age of 18-25 years old which operators are able to use for improving their services.

As a conclusion, for those accommodation operations which attract or attempt to attract young Cypriots should adjust with their changing needs, as they:

- go for high class (4 & 5 star hotels and luxurious resorts) and quality accommodation;

- seek for comfort, upgraded services, cleanliness and they care about the staff attitude;
- use as source of information the internet - operations should make use of this source and advertize in the internet;
- visit hotels all year round only if by any means are attracted by an accommodation operation;
- still look for swimming pool, gym and Jacuzzi facilities but more modern, convenient and upgraded;
- like to stay in hotels with modern and even minimal decoration;
- need available transportation with access to the hotel they wish to visit;
- adore fashion thus seek cloth/shoe shops and souvenir shops;
- wish to be provided with more tourist services; information and transportation for tours/sightseeing;
- like to visit mostly modern and of quality hotels' restaurants, bars and cafeterias;
- seek for low prices in terms of offers and value for money;
- seek technology/entertainment in the room e.g. satellite TV, Wi-Fi and radio with variety of music channels; and
- are motivated by modern, cleaned and thematic rooms.

It should be noted that there is an attempt for further researching on this field, where other sectors of the Hospitality, as well as the Tourism sector, are concerned. Thus, the following plans of research include:

1. The Demographic Trends of New Generations in Relation to the Restaurant Services; the case of Cyprus.
2. The Demographic Trends of New Generations in Relation to the Club/Bar Services; the case of Cyprus.
3. The Demographic Trends of New Generations in Relation to the Travel Services; the case of Cyprus.

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