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The Research Journal of CDA College

From the Editor

Call for Papers

We invite you to publish your paper in Summer 2012 Journal publication of CDA College, *The Cyprus Research Facts (TCRF)*.

The Journal publishes original papers in the areas of Business, Marketing, Humanities and Social Sciences, Pure and Applied Sciences, Economics, Tourism and Management.

All submissions should comply with the guidelines identified in the "Notes for Contributors" attached to this Call for Papers.

If you are interested in publishing in *The Cyprus Research Facts* but the full text is not ready for submission, please send by the 30th December, an abstract of your article to the Editor's office. The deadline for receiving manuscripts is the 31st May. Papers are acknowledged upon receipt.

Applications from interested academics to serve in the Editorial Board as well as reviewers are also welcomed.

**Pantelis Ioannou, Editor**

*The Cyprus Research Facts*
Notes for Contributors

The Cyprus Research Facts is a refereed publication with an international character and a broad perspective. The journal covers a wide spectrum of areas of interest, including among others, Business, Marketing, Humanities and Social Sciences, Pure and Applied Sciences, Economics, Tourism and Management. It publishes empirical, theoretical and methodological articles. Survey research, commentaries and book reviews are also of interest. Papers submitted to the CRF should not be under concurrent consideration at another journal.

Manuscripts should begin with a cover page indicating the title (Times new Roman, size 14) of the paper and the full address (i.e., author's name, affiliation, address, telephone number, fax number, and email address) for each author (in Times New Roman, size 11). The second page should repeat the title and contain an abstract (in Times New Roman, size 11, in italics) of no more than 100 words. Keywords (in Times New Roman, italics, size 10) should appear below the abstract, highlighting the main topics of the paper. The text (in Times new Roman, size 11, one space and the special about the paragraphs should be first line by 0.6 cm) should begin on page 3 and as far as possible should not exceed 7,000 words. Paragraphs should be numbered, be in capital letters and in the middle of the page. Sub-paragraphs should be numbered, be in small letters, in italics and in the far left side. Affiliations and acknowledgements should appear as a footnote (in Times New Roman, size 10) at the bottom of the first page and should be preceded by an asterisk. Where possible, affiliations should include the author's department and institution. Footnotes should be labeled NOTES (be numbered) and should appear at the end of the main text. Bibliographies should be labeled REFERENCES and should be listed alphabetically at the end of the main text without numbering them. Authors should adopt the following style:


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COMPLICITY BETWEEN CONSUMERS: A SERVICE RECOVERY STRATEGY

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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. Though there is a vast theoretical background, 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.

Key words: Complicity, service recovery, CtoC relationship, emotions, customer satisfaction, correction of servuction.
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.

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 organised ‘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 a discussion is submitted and further paths research are suggested.

1. Etymology and existing definitions

1.1. 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, pertore 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.

1.2. 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 deserves the same punishment because without the accomplice’s action the wrongful act could not have been committed (Roujou de Boubée & 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.
1- Absence of relevant literature in Marketing

To our 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 (Hirchman, 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). Communal relationships 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, neo-tribes (Eiglier, 2004), or psychological features, such as the need for recognition, positive and negative mood, stereotypical or prejudicial beliefs and

---

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

3. Exploratory research

3.1. 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 & 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 methods. 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, (eg. 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).

3.2. Findings

3.2.1. 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 equals.

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 organisation, whereas doing somebody a favour is the consequence of a social organisation, 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.

(Insert Table 1 – Differences between “doing somebody a favour” and complicity)

### 3.2.2. 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 are relationships of *complicity* 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 identified 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 CtoC 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). BtoC 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*.

- CtoC 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).

CtoC 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).

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

\textbf{Examples of Relationships of \textit{complicity} as customer satisfaction amplifier:}

\textbf{CtoC relationships of \textit{complicity organized by the firm} (‘\textit{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 \textit{complicity} are « institutionalized » and contribute to the service production.

\textbf{CtoC relationships of \textit{complicity against another customer}.} At the cashdesk 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.

**Definition an model of complicity**

**4.1. 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 represent potential management tools to make up for a service failure. In the 2009 version, the satisfaction amplifying effect has been removed (Antonini, 2009).

**4.2. 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 comportments such as of trust and loyalty may act upon the consumer and the enterprise.

(Insert Diagram1- 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.

**Discussion and further research**

### 3.3.1. 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.

### 3.3.2. 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 endeavour 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*. 
**Appendices**

**Table 1 – Differences between “doing somebody a favour” and complicity**

<table>
<thead>
<tr>
<th></th>
<th>Doing sb a favour</th>
<th>Complicity</th>
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<tbody>
<tr>
<td><strong>Relationship</strong></td>
<td>Dyadic</td>
<td>Exclusive</td>
</tr>
<tr>
<td></td>
<td>Asymmetric</td>
<td>Homothetic</td>
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<tr>
<td><strong>Emotions</strong></td>
<td>Weak</td>
<td>Strong</td>
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<tr>
<td><strong>Conséquences</strong></td>
<td>Moral debt</td>
<td>No debt</td>
</tr>
<tr>
<td><strong>Social organisation</strong></td>
<td>Strong cultural duties</td>
<td>Social balance</td>
</tr>
<tr>
<td><strong>Game</strong></td>
<td>Never</td>
<td>Can be</td>
</tr>
<tr>
<td><strong>Proximity</strong></td>
<td>Physical</td>
<td>Intellectual</td>
</tr>
<tr>
<td><strong>Civilities</strong></td>
<td>Compulsory</td>
<td>Not compulsory</td>
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Illustration 1. Conceptual model of relationships of complicity
References


INTRODUCING AN ELECTRONIC MARKETING MODEL FOR THE CYPRUS TOURISM ORGANISATION

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ABSTRACT

Traditional marketing methods that have been utilised by National Tourism Organisations for promoting their destination need to evolve to accommodate the new era of customers who are interacting online in pursuit of the best product offering. The paradigm illustrated in the current paper, entails the development of an electronic marketing deployment model that will optimise the implementation of the Cyprus Tourism Organisation’s electronic marketing strategy propositions. The utilisation of the electronic marketing deployment model illustrated will facilitate the efficiency of the Organisation’s marketing methods by adequately supporting customers’ experience at every step of the tourism buying process.

Keywords: Electronic Marketing, Destination Marketing, Travel and Tourism

Introduction

National Tourism Organisations’ (NTOs) role in this new era of electronic marketing communications involves the development and implementation of relevant strategies that will enable the optimised deployment of electronic marketing methods by the totality of the tourism industry. The successful implementation of these strategies will facilitate the optimisation of the destination’s marketing processes, resulting in enhanced competitiveness with direct impact on the destination’s economy (Fill, 2002).

Electronic marketing (eMarketing) methods enable the effective exchange of information between the NTO and the customers (B2C), the tourism service providers (B2B), as well as among the customers (C2C), in a dynamic environment that supports seamless information sharing across the time and space dimensions (Rowley, 2001).
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According to the World Travel Monitor (2007), during the year 2006, global overnight trips increased by 6.3% in comparison to 2005. People’s improved affluence in relation to liberalisation of travel restrictions promotes the weakening of international travel boundaries. International travel is expected to grow and reach over 1.56 billion tourist arrivals by the year 2020 (WTO, 2006).

Furthermore, the World Travel Monitor (2007), reports that in year 2006 expenditure reached 753 billion Euros, 7% increase over the previous year. However, the importance of travel goes beyond purely economic benefits. Social, political and educational reflections among people who engage in international travel are of vital importance.

Recognising the importance of both economic and non-economic benefits that the growth of the global tourism industry brings along, NTOs are expected to promote their tourist products and services. NTO’s efficient promotion mechanisms will result into the effective communication of their marketing offer to their target market (Fill, 2002).

An increasing number of businesses from all commerce areas deploy online marketing tools for promoting their products and services on the Internet. While travel is the Internet’s second largest commerce area (Frew, 2005; Buhalis, 2003; Lace, 2004), NTOs like the Cyprus Tourism Organisation (CTO) have been slow to utilise the potential offered benefits. Through the utilisation of the Internet, NTOs would be permanently available to their markets towards developing a global distribution channel.

1. LITERATURE REVIEW

Authors stress (Frew, 2005; Buhalis, 2003; Lace, 2004) that it is gradually being recognised that each and every destination in the world will somehow develop its online presence and will undertake some eMarketing activities. EMarketing tools and techniques application in the tourism industry have not received much attention by either academic studies or authors. Authors state (Frew, 2005; Buhalis, 2003; Lace, 2004) that the characteristics of successful management of new media within the context of marketing communications receive scant attention in academic literature. The majority of academic studies regarding eMarketing in the tourism industry focused on the use of the IT for destinations and the Internet as a means of global communication medium (Buhalis, 2003).
The 2001 report issued by the World Tourism Organisation (WTO): ‘E-Business for Tourism: Practical Guidelines for Tourism Destinations and Businesses’, was a very important publication that mentioned the future application of a number of online marketing techniques that could be used at that time by the NTOs. The WTO (2001) noted the potential and the importance of online marketing communication techniques for NTOs and issued guidelines on some of the techniques that were available.

Furthermore, the Handbook on eMarketing for Tourism Destinations issued by the European Travel Commission (ETC) in 2008 (ETC, 2008) illustrates in a practical manner the steps that NTOs should follow to effectively utilise eMarketing activities for promoting their destination.

The objectives of the strategic role of online marketing communications are encapsulated in the objectives associated with a Web presence and electronic Business (Rowley, 2001). Hence, for the purpose of this research paper it is important to explore the recent developments in eMarketing communication techniques in relation to the methods of deployment of these techniques in the tourism industry for yielding the utmost benefits for the CTO.

2. IDENTIFICATION OF THE CTO’S MARKETING MODEL

The CTO marketing communication mix consists of a set of tools that can be deployed in a variety of combinations towards communicating with the target audience (Fill, 2002). The CTO is involved in a series of traditional marketing activities (Kotler & Armstrong 2004) internationally for promoting Cyprus as a tourism destination. These activities involve:

- Generic advertising campaigns,
- Organisation of promotional activities such as Cyprus weeks, Cyprus presentations, seminars, workshops and road-shows,
- Provision of hospitality to tourism professionals, travel journalists, V.I.P’s and opinion leaders and
- Participation in Tourist and other specialised fairs.

Strategic Marketing at the CTO involves a number of activities towards the formulation of the organisation’s marketing model. The conception of the organisation’s marketing strategy is based on the definition of the overall objective of the organisation. The CTO’s primary strategic marketing objective has been defined to be (CTO, 2004): “the establishment of Cyprus as a quality tourist destination which will appeal to more upscale discerning travellers, thus contributing in securing continuous improvement in the quality of life of the Island's population”.

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The significant changes that are being observed in the global tourism industry since the advent of eMarketing tools and techniques impose on the CTO the need for change.

The CTO’s eMarketing strategy defines the path that should be followed by the CTO and its partners for marketing Cyprus through new media and by using modern marketing techniques to provide tourists with all the information and services they require. The eMarketing strategy sets the framework that will guide the CTO’s actions towards the utilisation of the available online marketing communication methods for maximising their potential return for Cyprus (CTO, 2005). Its primary objectives involve:

- The enrichment of the CTO’s worldwide marketing activities and their effectiveness and
- The improvement of the Organisation’s support and services to its partners that would consequently improve their abilities in promoting of Cyprus.

The deployment of eMarketing methods by the CTO aims at facilitating travel and tourism by adequately supporting the individuals’ online searching and booking experience. Through the formulation of well-defined eMarketing processes, the CTO plans to provide the individual traveller and the travel organiser an exceptional online searching and booking experience that will involve the facilitation of every step of the tourism buying process (Briggs, 2001), which consists of the following stages:

1. Aspire (The dream – reason to visit)
2. Inspire (The instigation–encouragement and verification to visit)
3. Illustrate (The product – demonstration to visit)
4. Simplify (The accessibility – simple to visit)
5. Book (The purchase – value to visit)
6. Experience (The travel – live the visit)
7. Post-Experience (The Follow-up – re-assurance of the visit)
8. Revisit (The Return – recursive visit)

The successful implementation of the eMarketing strategy will enable the CTO to extend its overall marketing activities in an attempt to maximise its channel reach and focused promotion through integrated marketing campaigns. Through the optimisation of its marketing effectiveness, by successfully utilising eMarketing methods in accordance to traditional marketing activities, CTO aims at achieving its strategic objectives.

3. CHARACTERISTICS OF CTO’S MARKETING ENVIRONMENT
A. Markets

A market can be defined as a set of all actual and potential buyers of a specific product or service. Markets contain groups of individuals who share similar features and respond in similar ways to marketing-mix stimuli. Kotler (1994) defines a market as consisting of “all the potential customers sharing a particular need or want who might be willing and able to engage in exchange to satisfy that need or want”.

In the European Commission’s Notice on the definition of the relevant market for the purposes of Community competition law (EC, 1997), the definition of a relevant market is used to identify and define the boundaries of competition of an organisation in both the product and geographic dimensions. The term ‘relevant market’ combines the terms ‘relevant product market’ and ‘relevant geographic market’, which are defined as follows (EC, 1997):

- ‘A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer by reason of the products' characteristics, their prices and their intended use.’
- ‘A relevant geographic market comprises the area in which the firms concerned are involved in the supply of products or services and in which the conditions of competition are sufficiently homogeneous.’

However, an appropriately defined relevant tourism market does not only involve the ‘relevant product market’ and ‘relevant geographic market’. A relevant tourism market definition should contain a third dimension, time. The definition of Cyprus’s relevant tourism market is highly influenced on temporal characteristics as traditionally most of the tourists that visit the island, do so during the summer season.

While the time dimension can be considered to be an extension of the product dimension, i.e. supply of a product on a temporal basis, it should be incorporated in the definition of a relevant tourism market. In the CTO’s Strategic Growth Plan for Tourism (CTO, 2004), the Cyprus’s relevant tourism market is defined across the three dimensions having the relevant product market dimension as the basis of the definition.

The definition of the relevant product market is based on a thematic segmentation that refines the Cyprus’s relevant tourism market based on the following tourism products:

- Sun and Sea Plus,
- Culture,
- Conference and Incentive,
- Nature and rural,
- Walking and Hiking,
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- Sports,
- Cycling,
- Marine Sports and Yachting,
- Mega Events,
- Weddings and Honeymoons,
- Religious,
- Sea Cruises.

Having the relevant product market as the basis of defining the Cyprus’s relevant tourism market, the CTO’s Strategic Growth Plan for Tourism (CTO, 2004), proceeds by identifying the relevant geographic market. The definition of the relevant geographic market is based on a national segmentation classifying as high priority markets the countries:

- United Kingdom,
- Russia,
- Greece,
- Germany,
- Ireland,
- France.

Given that traditionally most of the tourists that visit Cyprus do so during the summer season, a major consideration of the CTO’s Strategic Growth Plan for Tourism (CTO, 2004) was the temporal dimension of the Cyprus tourism market, or the relevant temporal market.

The relevant temporal market has a direct impact or relationship on the other two dimensions in a number of ways. First, the major product identified in the relevant product market definition is the ‘Sun and Sea Plus’, which is highly influenced on seasonal variations (Alegre & Cladera 2006). Second, the major country identified in the relevant geographic market definition is the United Kingdom, whose outbound leisure tourism can be characterised as highly seasonal (Coshall, 2006).

As specified in the CTO’s Strategic Growth Plan for Tourism (CTO, 2004), the foundation of Cyprus’s relevant tourism market is the island’s key product, ‘Sun and Sea Plus’, while the main market country is the United Kingdom. To achieve a wider temporal spread of the relevant tourism market, CTO should capitalise on these key market factors and should move on towards providing a clear and unique identity of the island’s plethora of products, as they are prioritised in the Cyprus’s relevant tourism market definition, to the high priority relevant geographic market countries. In
this way the relevant temporal market dimension will be overturned through extending the relevant product market as well as the relevant geographic market.

Market definition is not an end in itself. It is a key step in identifying and defining the competitive constraints acting on an organisation supplying a specific product or service. All in all, market definition provides a framework for competition analysis.

B. Competition

Competition analysis is an ongoing process of identifying the competitive environment that an organisation operates in towards assessing its current and potential competitors’ strengths and weaknesses. Being aware of its competitive environment, an organisation can better adjust its offered products and services towards enhancing its competitive position.

In order to evaluate the challenges imposed by the competitive environment on an organisation towards improving its marketing effectiveness the McKinsey’s 7S model (Peters & Waterman 1982) can be utilised. The model proposes that an organisation consists of seven elements, namely:

- **Strategy**: The direction and scope of the organisation in the long term.
- **Structure**: The organisation’s functions, hierarchies, management and boundaries.
- **Systems**: Formal and informal procedures that govern everyday activity.
- **Skills**: The capabilities and competencies available within the organisation.
- **Shared values**: The values and beliefs of the organisation that guide employees’ behaviour.
- **Staff**: The organisation’s human resources and their development, and motivation.
- **Style**: The management approaches and the organisation’s overall leadership styles.

The 7S Model is a valuable tool towards providing the direction of an organisation as well as initiating change (Pascale, 1991). An organisation should systematically apply the 7S Model to determine the current state of each element and to compare this with the ideal state. Based on the results of this activity it will be possible for an organisation to develop action plans to achieve the intended state.

The Cyprus Tourism Organisation recognising the fast changing global tourism environment that leads to increasing competition and customer value consciousness, has reconsidered its traditional business model (CTO, 2005). The increasing world volatility and the fast changing customer behaviour, has driven the CTO to focus into new product development.
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The emergence of new destinations that offer a similar tourism product to Cyprus, as well as the provision of better value by comparable destinations has driven the CTO to reposition Cyprus as a tourism destination. Having as the key driver the motivation of the island’s key markets the CTO has focused on market segmentation and product development in an attempt to enhance the quality of the visitor’s experience.

Towards achieving the objective of improving the island’s competitiveness, the CTO recognised the need for innovation through information and Communication technologies (ICT) deployment and continuous human resource development (CTO, 2006). Having established a firm eMarketing strategy, the CTO will be able to guide all industry segments’ actions towards facilitating enhanced communication and distribution of the Cyprus tourism product.

4. EMARKETING GLOBAL DEPLOYMENT MODELS

Organisational eMarketing deployment models evolve continuously and can be categorised in many different ways (Timmers, 1998; Eisenmann, 2002). While categorising eMarketing deployment models is a challenge, below a logical approach to their categorisation is presented (Rappa, 2005):

A. Brokerage Model: The brokerage model describes organisations that have as their core business the facilitation of transactions between buyers and sellers (Law & Huang 2003). Broker organisations provide the necessary tools for enabling the successful performance and completion of such transactions in business-to-business (B2B), business-to-customer (B2C), and customer-to-customer (C2C) markets. The revenue model of broker organisations is usually commission based on transactions. An example of a broker organisation is paypal.com.

B. Advertising Model: The advertising model describes organisations that have as their core business the distribution and broadcasting of advertising messages to customers (Novak & Hoffman 2000). Advertising organisations distribute and broadcast advertising messages that are relevant to the viewers’ requested information mixed with other content and services. The revenue model of advertising organisations is usually commission based on the viewer reach/response of the advertising messages. An example of an advertising organisation is doubleclick.com.
C. **Infomediary Model:** The infomediary model (information intermediaries) describes organisations that have as their core business the collection and analysis of customers and/or producers/products data. Infomediary organisations collect and analyse customers’ data that are related to their consumption habits as well as producers/products’ data towards assisting buyers and/or sellers understand a given market (Hagel & Singer 1999). The revenue model of infomediary organisations is usually commission based on the provided information validity and value to target marketing campaigns (for producers), and the information usefulness when considering a purchase (for customers). An example of an infomediary organisation is overture.com.

D. **Merchant Model:** The merchant model describes organisations that have as their core business the sale and distribution of goods and services (Handfield & Nichols 2002). Merchant organisations provide the necessary tools for enabling the sale and distribution of goods and services through e-shops and/or e-auctions in business-to-business (B2B), business-to-customer (B2C), and customer-to-customer (C2C) markets. The revenue model of broker organisations is usually commission based on sales. An example of a broker organisation is amazon.com.

E. **Manufacturer (Direct) Model:** The manufacturer or ‘direct model’ describes organisations that utilise ICT to reach customers directly, completely overriding the distribution channel (Stewart, 2002). Manufacturer organisations are characterised by efficiency, improved customer service, and a better understanding of customer preferences. The revenue model of manufacturer organisations is usually commission based on transactions. An example of a manufacturer organisation is dell.com.

F. **Affiliate Model:** The affiliate model describes organisations that provide the opportunity for customers to link-through and purchase their products or services from a number of affiliated web sites (Fiore & Collins 2001). An affiliated web site is one that facilitates the purchase by enabling the customer to click-through to the affiliate organisation. The revenue model of affiliate organisations is usually commission based on transactions or ‘click-throughs’. An example of an affiliate organisation is ebay.com.

G. **Community Model:** The community model describes organisations that have as their core business the creation of virtual communities for contributing to the achievement of a common goal (Kim, 2000). Community organisations are based on their user’s loyalty that contribute to the organisation’s operations by delivering content in various forms. The revenue model of
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community organisations is usually contribution based. An example of a community organisation is wikipedia.com.

H. Subscription Model: The subscription model describes organisations that charge their users a subscription to their offered services (Kauffman, 2007). Subscription-based organisations offer levelled services to their customers based on varied subscription fees. The revenue model of subscription-based organisations is usually a combination of subscription based and advertising. An example of a subscription-based organisation is date.com.

I. Utility Model: The utility model describes organisations that charge their customers for the services they receive on an on-demand basis (Malhotra, 2000). Utility organisations provide metered services that are based on actual usage rates. The revenue model of utility organisations is based on actual usage of the provided services. An example of a subscription-based organisation is skype.com.

An organisation can implement one or a combination of the above eMarketing deployment models towards achieving its strategic marketing objectives (Bradley, 2003). However, since organisational eMarketing deployment models evolve continuously, an organisation should constantly revise its deployment model by regularly evaluating its marketing environment.

5. A CONCEPTUAL EMARKETING MODEL FOR THE CTO

The CTO eMarketing strategy focuses in transforming the CTO into a knowledge-driven organisation. Through the optimisation of electronic channel deployment the CTO will act as a knowledge hub for its partners and individual tourists, enabling interactive internal and external communication (Machlouzarides, 2009).

The business processes that should be introduced by the CTO to sustain the execution of the proposed eMarketing actions should be based on metrics for evaluating the results at each stage of the eMarketing process implementation. In contrast to the difficulty in evaluating traditional marketing activities outcomes, the effectiveness of eMarketing activities can be continuously monitored and ad hoc corrective measures can be taken to enhance their effectiveness.

The challenge encountered by the CTO, in the process of formulating its marketing action plan, is finding the correct balance between traditional and modern marketing channels. The implementation of a well-balanced marketing action plan that
will involve the exploitation of traditional as well as modern marketing channels will significantly enhance the process of achieving the CTO’s marketing objectives (Machlouzarides, 2009).

Modern eMarketing channels should be deployed to enable the process of identifying and analysing target market demands and distributing quality products and services to satisfy those demands providing customer value in pursue of customer satisfaction.

The distinguishing feature that eMarketing channels provide in contrast to traditional ones is the wealth of information that can be generated during the process that can be deployed to enhance the effectiveness of the channels at the velocity at which everything moves. Consequently, eMarketing enabled marketing processes can be constantly managed in an efficient manner towards achieving a competitive advantage (Fill, 2002).

The CTO can deploy eMarketing methods to manage its marketing processes by facilitating relationships with customers in pursuit of sustainable tourism development. Individual customer interaction with the CTO’s eMarketing channels can be managed through the identification and analysis of the individual behaviour and preferences thus providing a unique experience at every point of contact.

The ability of the CTO to analyse, segment and target customers in real time through the deployment of eMarketing methods will enable the provision of unique customer experiences, engaging customers, leading into strong customer relationships. Operating within the strategic market – product segments (CTO, 2004), the CTO can further segment customers based on their behavioural and preference patterns.

Customers interacting with the CTO through the eMarketing channels may be segmented based on their (Hass, 2005):
1. Accessibility; Ease to reach them efficiently,
2. Differential; Responsiveness differences to different marketing mix,
3. Actionability; Product or service availability for segment,
4. Measurability; Ease to measure their size and purchasing power,
5. Substantial; Size and profitability of the segment.

Segmenting customers based on the above criteria will enable the CTO to formulate and define specific customer profiles, which will lead to personalised interaction. Deploying the possessed knowledge about the specific customer segments, the CTO can continually refine the marketing mix at a segment level and provide a customised interaction experience at an individual segment level.
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The analysis of the information about customer interaction through the multiplicity of eMarketing channels will enable the CTO to continuously refine individual segment profiles in an attempt to enhance customer interaction. The outcome of the above process will be the generation and management of strong customer relationships towards achieving the CTO’s marketing objectives (CTO, 2004).

6. THE CTO’S EMARKETING MODEL

Reflecting on the results of the analysis of the relevant data to the research constructs considered (Machlouzarides, 2009) and following the evaluation of a number of alternative eMarketing models (Briggs, 2001; Kotler, et al., 2006; Chaffey, et al., 2005; Schwede, 2007), the researcher has concluded that the most appropriate approach that should be followed for the development of an eMarketing model for the CTO is a combined one. Hence, the researcher in his attempt to capture and represent to the best possible extent the CTO’s eMarketing model, has encompassed traditional as well as modern marketing models like the ‘four P’ model (Borden, 1964), the ‘seven P’ model (Bitner, et al., 1990), the ‘AIDA’ model (Rowley, 2001), the ‘three C’ model (Ohmae, 1991) and the ‘four C’ model (Lauterborn, 1990). As a result, the developed model manages to address all the aspects of the eMarketing process that are relevant to the current research paper. Moreover, the proposed model encompasses both the customer’s perspective and the CTO’s perspective at every stage, the specific eMarketing activities that the CTO should employ as well as the attention factors that should guide the successful deployment of these activities.

Figure 1 illustrates the eMarketing model. The implementation of the model aims at setting the framework for the optimal execution of specific eMarketing actions within the existing marketing environment towards the attainment of the objectives put forward by this research paper.

FIGURE 1: THE CTO’S EMARKETING MODEL

Source: (Machlouzarides, 2009)
A detailed illustration of the model’s stages follows:
A. Instigate & Engage: Within the context of the first two stages of the model which aim at creating customer awareness and generating sales leads, both offline and online channels should be deployed complementing each other. Traditional marketing activities such as generic advertising campaigns tourism fairs, workshops and road shows as well as familiarisation and hospitality trips of tourism professionals, may be deployed in combination with electronic content distribution and interactive online rich media advertising towards the attainment of efficient interactive communication with customers (Kotler et al, 2006).

The integrated marketing approach will facilitate the successful creation of customer awareness for satisfying their specific needs and as a result develop new sales demand. In heading towards this direction, the CTO should deploy addressable online advertising activities that should aim at serving the correct message to the appropriate target market at the right time, based on the target market’s behavioural attributes. Furthermore, the CTO should set up a content distribution strategy that will guide its activities towards coordinating content creation and distribution across
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different communication channels across the time and place dimensions for maximising the intended message’s impact (Schwede, 2007).

Through the successful integration of traditional and electronic marketing activities for the first two stages of the model, the CTO will manage to increase customer response rates which will lead to maximising the number of customers that engage and move to the next stage of the process, with better possibilities of sales lead generation.

**B. Convert & Support:** As the customer moves to the next two stages of the model, the CTO is expected to provide online and offline support to guide the customer through the sales process and to facilitate order fulfilment. Through the provision of a call centre that should be available in both an offline and an online environment as well as through the availability of online help and support services on the CTO’s portal, the satisfaction of customers’ expectations will be facilitated resulting in the successful completion of the purchase process (Briggs, 2001).

Cross selling facilities aiming at enticing customers with specific product or service offers that are relevant to the individual customer’s profile should be offered at this stage through online communication channels. The analysis of the individual customer’s behaviours and characteristics, in relation to the purchased products and services, though relevant customer relationship models, will enable the optimisation of cross selling services, which will aim at enhancing the customer’s experience with the destination.

The quality of customer service during the process is guided by the availability of bookable products and services in an online booking system within the organisation’s online portal. Additionally, the provision of supporting applications that will assist the customers in the process of organising their visit is of critical importance. The quality of communication during the process is guided by information accuracy, completeness and timeliness as well as by the security measures established for ensuring that customer transactions involved are completely safe and carried out as smoothly as possible (Choi, et al, 2008).

During the visit of the customers to the destination the CTO is expected to provide customer care and support services. Through the provision of a combination of traditional and electronic customer support services the CTO will manage to maintain close contact with the customers in its attempt to anticipate and satisfy their expectations. This will be possible through the analysis of the relevant customers’
information to derive their individual preferences and employ the appropriate procedures to support them.

By employing relevant applications that can support individual customer’s expectations across the time and place dimensions, the CTO will manage to maximise its customers’ travel experience by facilitating the satisfaction of their needs throughout their visit. Through the deployment of proximity marketing activities (BLIP, 2005) the CTO will manage to communicate with its customers based on their behavioural attributes. The utilisation of these applications will enable the derivation of valuable knowledge towards understanding customers’ behaviour in relation to their interests and preferences. The combination of this knowledge with the knowledge about the customers’ online and offline behaviour during the buying process will enable the implementation of advanced customer segmentation strategies by the CTO in an attempt to enhance the quality of the visitor’s experience.

As a result, the contribution of valuable feedback in the destination’s product development processes will be made possible. This will enable the customisation of the offered products and services to satisfy the specific customer segments’ requirements. The realisation of a close relationship among the CTO’s product development and marketing services will result to the optimisation of the CTO’s marketing processes, augmenting the competitiveness of Cyprus as a tourism destination worldwide.

C. Retain: During the final stage of the model the CTO should carry out post purchase communication with the customers in the form of online satisfaction surveys in an attempt to recognise the degree of customer satisfaction through the provided services and identify any product or service weaknesses. Through the collection and analysis of the results gathered, the CTO will be able to derive valuable conclusions about the customers’ expectations and their corresponding satisfaction levels for taking the relevant corrective measures in the product development as well as the service quality standards (Hair, et al, 2003).

7. IMPLICATIONS FOR PRACTICE

The proposals of this research paper have specific implications for the CTO in regards to the implementation model of its eMarketing strategy. This research paper identifies the key attributes into which the CTO should invest resources towards the enrichment of the Cyprus Tourism Organisation’s marketing activities towards augmenting the competitiveness of Cyprus as a tourism destination worldwide.
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The implications that this research paper has on the CTO, relate directly to the expected impact of the model outcomes that are relevant to the specific objectives set (CTO, 2006). By reflecting on the eMarketing model developed in this research paper, a number of implications are evident that when implemented will achieve the desired outcomes. In pursuing the paradigm proposed by the eMarketing model developed for this research paper, the CTO will manage to gain comprehensive understanding of customer expectations that will enable new strategic directions for facilitating their satisfaction. As a result of the optimised deployment of eMarketing activities, a positive impact will be observed on the sustainable development of the Cyprus tourism industry.

This research paper is premised on the belief that in a highly competitive business environment, the only way forward for the CTO is maximising the effectiveness of its marketing efforts worldwide. This could only be achieved through the integration of eMarketing processes into traditional marketing processes for enabling the:

- Improvement of the CTO’s communication efficiency with its customers.
- Enhancement of the CTO’s brand image.
- Enrichment of customer service through eMarketing channels.
- Facilitation of customer profiling and the achievement of relationship marketing.
- Improvement of knowledge distribution across the Cyprus tourism industry.
- Reinforcement of tourist loyalty as a result of increased customer satisfaction.

The interactive nature of eMarketing activities will assist the CTO in the process of identifying customers’ preferences for delivering value adding services in the process of building long term relationships with them. The optimisation of the process of eMarketing strategy implementation by the CTO will enhance customer satisfaction, towards achieving retention and loyalty (Galbreath, 2002).

Additionally, the initiation of customer loyalty schemes which will be supported by a Customer Relationship Management and an online booking system can lead to effectively maintaining valuable customer accounts. This will facilitate Cyprus’s tourism product and service differentiation towards personalising the offering to its customers making the notion of “one product fits all” irrelevant. The successful implementation of the eMarketing strategy based on the proposed model, will enable the attainment of on-demand, customised and dynamic product creation achieving a “one product or service to one customer” marketing strategy. As a result, customer value will be enhanced, facilitating the sustainable development of the Cyprus tourism industry.
In the process of pursuing a customer orientation strategy, the CTO is advised to segment customers according to their value to the organisation as to cost effectively implement the organisation’s retention strategies. Keeping and serving the right customers requires a good understanding of customers’ preferences and delivering value depending on their needs and wants. An understanding of customers’ variances on demographic and experience variables will provide insights for the CTO marketing executives in planning and implementing effective customer acquisition and retention strategies. Segmentation of customers should be connected to customer behaviour profiling in order to derive knowledge of the range of values that are expected to be delivered to groups of customers or individuals.

During the process of implementing its eMarketing strategy, the CTO should continuously evaluate the outcomes against the relevant objectives to ensure its effective implementation. Reconsidering value adding services and understanding customers’ current needs as well as anticipating their future needs are among the critical criteria that need to be assessed in order to stay competitive in the modern marketplace. Therefore a key factor for the successful attainment of the CTO’s strategic objectives is the synchronisation of the eMarketing activities with the traditional marketing activities.

Based on this, the CTO is advised to focus on integrating its marketing efforts for efficiently targeting its customers. Hence, the CTO’s marketing plans should involve a comprehensive approach that will lead to customer engagement through a combination of integrated marketing activities. This will drive the CTO towards serving the customer’s preferences more efficiently and will enable new strategic directions for benefiting the CTO from enduring customers’ relationships.

Through the integration of its marketing processes the CTO will manage to establish a common knowledge repository which will enable the derivation of valuable conclusions about understanding customers’ preferences and segmenting them according to their value to the organisation. The integration of knowledge management models with the CTO’s strategic objectives will enable the execution, management and monitoring of holistic marketing campaigns across alternative communication channels that will enable interaction with the customers in an attempt to satisfy their varying needs at a personalised level (Galbreath, 2002).

Through enabling the provision of integrated marketing services to the customers, the CTO will manage to improve customer satisfaction and in extend build long lasting relationships with customers towards gaining a competitive edge.
8. LIMITATIONS AND FUTURE DIRECTIONS OF RESEARCH

During the course of writing this research paper a series of questions have arisen that are interesting for future investigation and which cannot be answered by the work performed as they are outside the scope of the current paper. These questions involve:

- The investigation of ways through which customer relationships can be catered for online,
- The analysis of customer loyalty determinants and their provision through eMarketing channels,
- The realisation of the eMarketing model presented through the implementation of relevant eMarketing tools,
- The maintenance of customer databases for deriving knowledge that will facilitate customer retention,
- The exploration of new customer satisfaction determinants for implementing advanced customer segmentation strategies.

This research paper is concerned with the optimisation of the implementation of the CTO’s eMarketing strategy. Although the CTO is advised to adopt the proposals of this research paper, the expected benefits may vary depending on the implementation scale. A relatively small destination like Cyprus may not be able to fully utilise the potential of the eMarketing model developed due to constraints in resources. Hence, eMarketing implementation in various business scenarios merits further investigation.

Moreover, while this research paper assumes a positive relationship between eMarketing and satisfaction, eMarketing features may have changed rapidly since the point of time this study was conducted. Therefore additional research may be necessary to incorporate other factors of eMarketing not included in this research paper.

The results of this research paper may be applied to other countries with similar levels of eMarketing deployment in the tourism industry or to other industries and business environments. Potential areas of study are whether other factors of eMarketing, which influence assessment of satisfaction, can be identified in regions where customers’ behaviour may differ depending on culture, beliefs and technology acceptance level. Therefore, before conclusions and implications can be made to other countries, further research should be conducted.
9. CONCLUSIONS

The key for optimising the CTO’s marketing processes is the successful integration of traditional marketing activities with eMarketing activities based on the model illustrated in this research paper. The model development was founded upon the CTO’s marketing executives’ mindset and expectations and facilitates the satisfaction of its online visitors / customers’ expectations. Moreover, it reflects on the Organisation’s existing marketing services and the Cyprus tourism industry’s electronic marketing deployment levels.

The impact of this research paper’s outcomes will be reflected on the people living in Cyprus (locals and tourists) through the sustainable socio-economic developments that the implementation of the CTO’s integrated tourism marketing model will bring along. The CTO, by closely monitoring and fine-tuning the performance of its marketing activities, will realise real-time customer segmentation, facilitating customer experience optimisation throughout the tourism buying process. This will have a direct impact on the tourism product development processes and the quality of the offered services, reinforcing Cyprus’ competitive position in the relevant tourism markets.

The utter objective that is aimed to be achieved by the implementation of this model’s outcomes is the improvement of Cyprus’ competitiveness as a tourism destination worldwide.

10. REFERENCES


Introducing an electronic marketing model for the Cyprus tourism organisation


THE RELATIONSHIP BETWEEN DISTRIBUTED LEADERSHIP AND SCHOOL CLIMATE IN PUBLIC SECONDARY SCHOOLS IN CYPRUS

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*Lecturer, Business Administration Department
CDA College, Cyprus

Abstract
This study aims to help to develop an understanding of how the school climate is related to distributed leadership at public secondary education in Cyprus. This survey was conducted in 6 randomly selected schools where the perceptions of 221 teachers and Deputy Heads were examined. The findings provide some empirical support for the identification of the factors of distributed leadership and school climate. The article presents an original empirical study which investigated the relationship among the distribution of leadership and the school climate to validate the relationship between them.

Keywords Schools, distributed leadership, organizational climate, teachers, Deputy Heads, Cyprus.

Paper type Research paper

1. Introduction
The climate of the 21st century is characterized by a rapid change and increasingly high expectations. It begins with a call for accountability that is stronger than ever (Wilson, 2005). Elmore (2000), supports that the schools should be considered as the fundamental unit of accountability, where teaching and learning actually occurs.

In this climate the role of the principal was not all that needed to be dealing with school-level leadership (Wilson, 2005). Through the current leadership crisis a new vision of effective leadership emerged, one in which multiple school members are seen as exercising powerful instructional leadership in order to effect programmatic change and instructional improvement.
The empirical evidence concerning this new vision is limited. The formal research is based on how best to staff and distribute school leadership and responsibilities. Some evidence allows for the analysis of particular patterns of staff across countries (Kythreotis, 2010).

An early research by Brookover (1979), Edmonds (1979), and Rutter, Maughn, Mortimore, and Ouston (1979) found that correlates of effective schools include not only strong leadership but also a climate of expectation with an orderly but not rigid atmosphere, and effective communication. They suggested that the presence or absence of a strong educational leader, the climate of the school, and attitudes of the teaching staff can directly influence student achievement (as cited in Kelley, Thornton & Daugherty, 2005 p.2). Ubben and Hughes (1992) note that principals could create a school climate that improves the productivity of both staff and students. According to the leadership style that each principal adopts, teacher effectiveness can be fostered or restricted.

The above analysis reveals that there is a lack of studies examining the relationship between distributed leadership and school climate. This lack is considered as a weakness not only in Cyprus research but internationally as well. It indicates the necessity for more studies that should examine the relationship between distributed leadership and school climate. So, the purpose of this study is to examine through teachers’ and Deputy Heads’ perceptions the levels of distributed leadership and school climate, the demographic characteristics that are significantly related with distributed leadership and school climate separately and the statistically significant relationships between factors of distributed leadership and factors of school climate.

2. Concept of Distributed Leadership

The idea of distributed leadership is not a new one. As far back as 1984, Murgatroyd and Reynolds stressed, “leadership can occur at a variety of levels in response to a variety of situations and is not necessarily tied to possessions of a formal organizational role” (as cited in Humphreys, 2010 p. 14).

Distributed leadership as a way of exercising leadership doesn’t seem to have a definition that is widely accepted. MacBeath et al. notes terms such as ‘dispersed leadership’, ‘devolved’, ‘shared’, ‘teamed’ and ‘democratic’ (as cited in Arrowsmith, 2004 p. 31). Gronn (2000) characterizes distributed leadership as an alternative concept of educational leadership compared to the other forms of leadership.

Distributed leadership can be defined as the sum of leadership actions and practices of multiple individuals, inside and outside school environment, and occurs through the complex network of relationships among all school system stakeholders, school staff, parents, students and community members. (Scribner et al. 2007; Gronn, 2000 as cited in Papageorgiou and Kythreotis, AERA conference 2010).
Gronn (2002) one of the main researchers of distributed leadership, provides a compelling analysis of the practice by distinguishing two main forms of leadership. The first aspect is called ‘additive’ perspective (as cited in Kythreotis, 2010). It describes how a number of different people may offer leadership in an organization, without any attempt to coordinate this leadership. The most significant element in this case is that individuals take into account what the others are doing. Therefore, leadership is numerically dispersed through an organization or system and can be measured as the sum of leadership behaviors across the organization. This approach links conventional notions of leadership role and hierarchical work structure.

The second aspect is called ‘concertive’ perspective where leadership is more than the sum of its parts. It is an approach to leadership which is deliberate, planned and coordinated. This approach permits leaders work closely together, ensuring that the work of one leader builds on and links to the work of others. This coordinated approach ensures that all the members are working towards a common goal, and they all learn as they move on.

3. Concept of School Climate

During the 1970s and 1980s the research in the field of education focused on school improvement and on the development of effective schools. Scholars and effective school researchers have claimed that, by focusing on key educational processes such as instructional methods, classroom organization and climate or culture, some school characteristics can be identified that are positively related to student achievements (Pashiardis, 2000). More specifically school climate was identified as one of the few critical factors for enhancing a school’s effectiveness and success (Roueche and Baker, 1986; Lezotte, 1992 as cited in Pashiardis, 2000 p.224).

Hoy and Miskel defined climate as “the set of internal characteristics that distinguish one school from another and influence the behaviors of each school’s members”. It refers to the perceptions of the teachers about the general work environment of the school. This environment is influenced by the formal and informal organization, the personalities of the participants, and the kind of leadership that is applied within the organization. School climate is “a relatively enduring quality of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools” (Hoy and Miskel, 2008, p.198). “Climate” is to an organization what “personality” is to an individual (Roueche and Baker, 1986, as cited in Pashiardis, 2000).

4. The aims of the study

The main purpose of the study presented in this paper is to help to develop an understanding of how the climate of the school is related to distributed leadership at public secondary education in Cyprus. More specifically this study stems to identify:
1) Which are the teachers’ perceptions about the levels of Distributed Leadership in Cyprus Secondary Schools?
2) Which are the teachers’ perceptions about the levels of School Climate in Cyprus Secondary Schools?
3) Which demographic characteristics are significantly related with Distributed Leadership in Public Secondary Schools in Cyprus?
4) Which demographic characteristics are significantly related with School Organizational Climate?
5) Are there statistically significant relationships between factors of Distributed Leadership and factors of School Climate?

5. Methodology

5.0 Participants
As the term of population was considering all educators in Limassol, but the study was based on a sample of six randomly selected schools which participated at the survey for the school year 2009-2010. The six schools include 460 teachers in service and 221 of them participated voluntarily. The overall response rate for this study was 51.3 percent. The majority of them were women (65 percent). The majority of the participants were aged between 30 and 39 years old (32.6 percent). The majority of them had a range between 0 and 4 years (63.8 percent) at the specific school while they are in service between 5 and 9 years (26 percent). Finally, the 87 percent were teachers and the rest were Deputy Heads.

5.1 The process of the development of the questionnaires
The main instrument that was used for the collection of the data was the Distributed Leadership and School Climate Questionnaire to measure teachers’ and Deputy Heads’ perceptions about distributed leadership and school climate. For the development of each part of the instrument two questionnaires were used and modified under permission: the Questionnaire of Distributed Leadership of Papageorgiou (2008) and the Questionnaire of School Climate of Pashiardis (1996).

After the permission was given the questionnaire was modified and took its final form as a part of its validation. For the first part (Distributed Leadership) the 15-items survey is the result based on a modification of an instrument including 42 items. It assesses two dimensions: questions related to principalship and teachers’ involvement in school leadership. The items measured are identical; only the stems of each statement are changed to reflect the difference in perspective. Validation studies indicate that teachers’ perspectives provide the most valid data, and, hence, this study will only use the teachers’ and Deputy Heads’ perspectives.

For the second part (School Climate) the 22-item survey is the result of a modification of an instrument with 30 items. It assesses four dimensions of school
climate: communication, cooperation, organization and leadership and teachers. Again, this survey will only use the teachers’ and Deputy Heads’ perspectives.

The initial language of the questionnaire was Greek since all the teachers were Greek Cypriots. All the indicators were scored by each participant using a Likert scale ranging from 1 (Almost never), 2 (rarely), 3 (sometimes), 4 (frequently) to 5 (Almost always). The survey was first piloted by six teachers in one of the six participating schools. The results of that pilot were used to determine if any modification in the survey were needed before the survey was administered to the six schools selected for this survey. The modifications were minor. The most significant one was to change the word officer to principal since teachers were not sure if the word officer corresponds to principal or deputy head. After the modification, it was believed that each of the indicators was something that would be understood by members of staff involved in the school improvement process.

5.2 The data analysis

The problem was to identify the statistical relationships among perceptions of the distribution of leadership and school climate. In order to analyze the data the SPSS statistical package and Microsoft Excel spreadsheets were used as methods of data collection. Descriptive statistics were used to find the means, the standard deviation and the percentage of each item on each instrument. Factor analysis and reliability analysis were used in order to validate each of the two parts of the questionnaire (Part A–Distributed Leadership and Part B-School Climate). T-test and Anova analysis were used to examine the possible effects of demographic variables on both distributed leadership and school climate.

6. Results

As it has already been mentioned, this study has five main aims and for this reason, the results of data analysis are presented below in agreement with the five research questions.

6.0 The teachers’ perceptions about the levels of distributed leadership in Cyprus Secondary schools (Aim 1)

In order to develop an understanding of teachers’ perceptions about the levels of distributed leadership in Cyprus Secondary Schools a number of statistical analyses were made. The means and the standard deviation of the questions were calculated at first and then an explanatory analysis and a reliability coefficient were calculated. In addition the means and the standard deviation of each factor were measured.

From the factor analysis that was conducted on the 15 items of distributed leadership questionnaire three factors of distributed leadership were identified: factor related to principal, factor related to Teachers’ Involvement in School Leadership, and factor related to Evaluation (Table 1).
The Relationship Between Distributed Leadership And School Climate In Public Secondary Schools In Cyprus

Table 1. Rotated Component Matrix. Factor analysis of Distributed Leadership.

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. The principal trusts the professional judgment of teachers.</td>
<td>0.89</td>
<td>0.09</td>
<td>0.04</td>
</tr>
<tr>
<td>14. The principal treats teachers as equals.</td>
<td>0.88</td>
<td>0.06</td>
<td>0.13</td>
</tr>
<tr>
<td>13. The principal makes faculty members feel and act like leaders.</td>
<td>0.88</td>
<td>0.06</td>
<td>0.13</td>
</tr>
<tr>
<td>11. The principal encourages and promotes cooperation among teachers.</td>
<td>0.82</td>
<td>0.22</td>
<td>0.12</td>
</tr>
<tr>
<td>8. The principal listens to and accepts teachers’ suggestions.</td>
<td>0.8</td>
<td>0.22</td>
<td>0.16</td>
</tr>
<tr>
<td>15. My involvement in decision making has been taken seriously by the school’s principal.</td>
<td>0.76</td>
<td>0.17</td>
<td>0.06</td>
</tr>
<tr>
<td>3. The principal of the school encourages teachers to take leadership responsibilities.</td>
<td>0.66</td>
<td>0.25</td>
<td>0.13</td>
</tr>
<tr>
<td>10. All members of faculty are free to make suggestions on schools improvement plans for student achievement.</td>
<td>0.58</td>
<td>0.39</td>
<td>0.07</td>
</tr>
<tr>
<td>2. Teachers participate in school’s improvement goals setting.</td>
<td>0.17</td>
<td>0.81</td>
<td>0.08</td>
</tr>
<tr>
<td>1. Teachers share information about classroom practices.</td>
<td>0.05</td>
<td>0.64</td>
<td>0.29</td>
</tr>
<tr>
<td>9. I have helped maintain discipline not just in my classroom, but in the entire school.</td>
<td>0.34</td>
<td>0.6</td>
<td>0.02</td>
</tr>
<tr>
<td>7. At the beginning of the school year, teachers have participated in school’s mission creation.</td>
<td>0.35</td>
<td>0.5</td>
<td>0.35</td>
</tr>
<tr>
<td>6. Teachers observe peers when they are teaching and then provide the necessary instructional feedback.</td>
<td>0.15</td>
<td>0.11</td>
<td>0.9</td>
</tr>
<tr>
<td>5. Teachers observe other teachers while they are teaching.</td>
<td>0.03</td>
<td>0.21</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Eigenvalues

<table>
<thead>
<tr>
<th></th>
<th>6,431</th>
<th>2,210</th>
<th>1099</th>
</tr>
</thead>
</table>
% of the Variance

|                  | 42,876 | 14,731 | 7,326 |

After the identification of the three factors of distributed leadership the Standard Deviation, Mean and Reliability of the three factors were measure (table 2). As shown in table 2 the higher mean is noted in the questions related to the Principal. In general the levels of distributed leadership in public secondary education
in Cyprus are medium (around three) according to teachers’ and Deputy Heads perceptions. Also, since the alpha is between 0-1 then the results are reliable.

**Table2. Standard Deviation, Mean and Reliability of the three factors of Distributed Leadership**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Questions</th>
<th>Mean (x)</th>
<th>SD</th>
<th>Chronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Principal.</td>
<td>3, 8, 10, 11, 12, 13, 14, 15</td>
<td>3.74</td>
<td>0.98</td>
<td>0.92</td>
</tr>
<tr>
<td>2. Teachers' Involvement in School Leadership.</td>
<td>1, 2, 7, 9</td>
<td>3.59</td>
<td>0.84</td>
<td>0.66</td>
</tr>
<tr>
<td>3. Assessment.</td>
<td>6, 5</td>
<td>2.18</td>
<td>2.18</td>
<td>0.84</td>
</tr>
</tbody>
</table>

6.1 The teachers’ perceptions about the levels of school climate in Cyprus Secondary schools (Aim 2)

For reaching the aim 2 a number of statistical analyses of the data were made. The means and the standard deviation of the questions were calculated, an explanatory factor analysis was conducted and the reliability coefficient (α), for the question of each factor was calculated. Also, the means and the standard deviation of each factor were measured.

The factor analysis of school climate identified three factors of school organizational climate: factor related to Communication and Management of the Organization, factor related to Collaboration and factor related to Students. (Table 3).

**Table3. Rotated Component Matrix. Factor analysis of School Climate**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. My principal’s expectations for the school are clear.</td>
<td>0.84</td>
<td>0.19</td>
<td>0.14</td>
</tr>
<tr>
<td>2. The information given from my principal is useful for my work.</td>
<td>0.83</td>
<td>0.16</td>
<td>0.19</td>
</tr>
<tr>
<td>15. The verbal feedback I get from my principal is useful for my work.</td>
<td>0.79</td>
<td>0.17</td>
<td>0.14</td>
</tr>
<tr>
<td>1. I feel satisfied from the information given from my principal.</td>
<td>0.76</td>
<td>0.3</td>
<td>0.09</td>
</tr>
<tr>
<td>4. The expected results of the class and the school are clear enough from my principal.</td>
<td>0.73</td>
<td>0.24</td>
<td>0.19</td>
</tr>
<tr>
<td>6. The verbal communication with my principal is satisfying.</td>
<td>0.68</td>
<td>0.27</td>
<td>0.18</td>
</tr>
<tr>
<td>16. The verbal feedback I get from my evaluator is useful for my work.</td>
<td>0.67</td>
<td>0.17</td>
<td>0.27</td>
</tr>
<tr>
<td>Statement</td>
<td>Alpha</td>
<td>Mean</td>
<td>Reliability</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------</td>
<td>------</td>
<td>--------------</td>
</tr>
<tr>
<td>17. Everyone can get responsibilities at school area.</td>
<td>0.59</td>
<td>0.31</td>
<td>0.2</td>
</tr>
<tr>
<td>14. My job is guided by school rules and official procedures.</td>
<td>0.52</td>
<td>0.2</td>
<td>0.29</td>
</tr>
<tr>
<td>9. I am satisfied with the collaboration spirit among colleagues of other specialties.</td>
<td>0.105</td>
<td>0.85</td>
<td>0.21</td>
</tr>
<tr>
<td>8. I am satisfied with the collaboration spirit among colleagues of the same specialties.</td>
<td>0.12</td>
<td>0.75</td>
<td>0.23</td>
</tr>
<tr>
<td>7. I feel that I have chances to cooperate with my peers.</td>
<td>0.29</td>
<td>0.75</td>
<td>0.23</td>
</tr>
<tr>
<td>11. Collective decisions are taken for problem solving among colleagues of different specialties at school.</td>
<td>0.32</td>
<td>0.59</td>
<td>0.17</td>
</tr>
<tr>
<td>12. I have the opportunity to perform innovative ideas that could be used by other colleagues.</td>
<td>0.44</td>
<td>0.57</td>
<td>0.1</td>
</tr>
<tr>
<td>10. Collective decisions are taken for problem solving in my school.</td>
<td>0.41</td>
<td>0.53</td>
<td>0.14</td>
</tr>
<tr>
<td>13. My job is recognized.</td>
<td>0.47</td>
<td>0.51</td>
<td>0.06</td>
</tr>
<tr>
<td>21. The offered education helps as a preparation for the students’ future career.</td>
<td>0.23</td>
<td>0.16</td>
<td>0.8</td>
</tr>
<tr>
<td>20. The teachers try to be as efficient as they can.</td>
<td>0.09</td>
<td>0.09</td>
<td>0.79</td>
</tr>
<tr>
<td>19. The quality of teaching offered to students is satisfying.</td>
<td>0.29</td>
<td>0.1</td>
<td>0.73</td>
</tr>
<tr>
<td>22. The school environment is pleasant for students.</td>
<td>0.23</td>
<td>0.28</td>
<td>0.65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eigenvalues</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>% of the Variance</td>
<td>9.69</td>
<td>1.7</td>
<td>1.65</td>
</tr>
<tr>
<td></td>
<td>44.05</td>
<td>7.74</td>
<td>7.52</td>
</tr>
</tbody>
</table>

After the identification of the three factors of school climate a Standard Deviation, Mean and Reliability of the three factors were measured (table 4). As shown in table 4 the levels of school climate at public secondary education in Cyprus according to teachers’ and Deputy Heads perceptions are medium to high (3-4). Also, since the alpha is between 0-1 then the results are reliable.
Table 4. Standard Deviation, Mean and Reliability of the three factors of school climate

<table>
<thead>
<tr>
<th>Factor</th>
<th>Questions</th>
<th>Mean (x)</th>
<th>SD</th>
<th>Chronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Communication and Management.</td>
<td>1,2,3,4,5,6,14,15,16,17</td>
<td>3.67</td>
<td>0.91</td>
<td>0.92</td>
</tr>
<tr>
<td>2. Collaboration.</td>
<td>7,8,9,10,11,12,13</td>
<td>3.63</td>
<td>0.9</td>
<td>0.86</td>
</tr>
<tr>
<td>3. Students.</td>
<td>19,20,21,22</td>
<td>3.78</td>
<td>0.79</td>
<td>0.87</td>
</tr>
</tbody>
</table>

6.2 The demographic characteristics that are significantly related with distributed leadership in public Secondary schools in Cyprus (Aim 3)

In order to answer this question a number of statistical analyses of the data was made. Firstly, the t-test analysis was made to group the factors of distributed leadership related to gender, age and years at the school and one way Anova analysis followed.

T-test statistics were used to analyze the three factors of Distributed Leadership to find out their means, standard deviation, t-value, the degrees of freedom and the significance related to gender.

A statistical difference was observed concerning the age of the participants. The difference was between the answer 1 (29 years old or younger) and the answer 4 (50-60 years old) concerning the Involvement in School Leadership (table 5). The teachers that are 29 years old or younger are rating lower than the older teachers that are between 50-60 years old.

Table 5. One way Anova analysis. Age

<table>
<thead>
<tr>
<th>LINVOLVE</th>
<th>Mean</th>
<th>St.dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.36</td>
<td>0.61</td>
</tr>
<tr>
<td>2</td>
<td>3.56</td>
<td>0.53</td>
</tr>
<tr>
<td>3</td>
<td>3.54</td>
<td>0.62</td>
</tr>
<tr>
<td>4</td>
<td>3.71</td>
<td>0.64</td>
</tr>
<tr>
<td>total</td>
<td>3.59</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Also, a statistical difference was observed between the answer 1 (0-4 years) and the answer 5 (20 or more years) concerning the Involvement in School Leadership (table 6). The newly appointed teachers with years in service between 0-4 are rating lower than the experienced teachers with 20 or more years at the service.
Table 6. One way descriptives. Years at the service

<table>
<thead>
<tr>
<th>LINVOLVE</th>
<th>Mean</th>
<th>St. dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.44</td>
<td>0.63</td>
</tr>
<tr>
<td>2</td>
<td>3.59</td>
<td>0.58</td>
</tr>
<tr>
<td>3</td>
<td>3.52</td>
<td>0.54</td>
</tr>
<tr>
<td>4</td>
<td>3.55</td>
<td>0.67</td>
</tr>
<tr>
<td>5</td>
<td>3.80</td>
<td>0.56</td>
</tr>
<tr>
<td>Total</td>
<td>3.59</td>
<td>0.8</td>
</tr>
</tbody>
</table>

6.3 The demographic characteristics that are significantly related with school organizational climate (Aim 4)

In order to answer this question a number of statistical analyses of the data was made. The t-test analysis and one-way Anova was made to group the factors of School Climate related to gender, age and years at the school.

T-test statistics were used to analyze the three factors of School Climate to find out their means, standard deviation, t-value, the degrees of freedom and the significance related to gender.

Table 7 presents a t-test analysis between teachers that serve 0-4 years at the school and teachers that serve 5-9 years at the school. A statistical difference is presented to their means. Teachers who work from 0-4 years at the school note higher means than teachers with 5-9 years at the school concerning the factor related to Students.

Table 7. Years at the school

<table>
<thead>
<tr>
<th>CLISTUD</th>
<th>Mean</th>
<th>St.dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.84</td>
<td>0.65</td>
</tr>
<tr>
<td>2</td>
<td>3.64</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Table 8 presents the results of the t-statistics. A statistical difference is presented at the positions at the factor of School Climate related to Communication and Management. Teachers are noting lower means than Deputy Heads.

Table 8. Positions

<table>
<thead>
<tr>
<th>CLICOMMU</th>
<th>Mean</th>
<th>St.dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.62</td>
<td>0.7</td>
</tr>
<tr>
<td>2</td>
<td>3.93</td>
<td>0.69</td>
</tr>
</tbody>
</table>
Table 9 presents the results on One-way Anova analysis for the question related to the years in service. There is statistical difference between the answer 3 (10-14 years) and 5 (20 or more). Teachers with experience between 10-14 years note lower means than teachers with experience more than 20 years.

<table>
<thead>
<tr>
<th>Table 9. Years at the service</th>
<th>Mean</th>
<th>St.Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLICOMMU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3.58</td>
<td>0.75</td>
</tr>
<tr>
<td>2</td>
<td>3.70</td>
<td>0.65</td>
</tr>
<tr>
<td>3</td>
<td>3.46</td>
<td>0.74</td>
</tr>
<tr>
<td>4</td>
<td>3.56</td>
<td>0.6</td>
</tr>
<tr>
<td>5</td>
<td>3.91</td>
<td>0.72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3.67</td>
<td>0.71</td>
</tr>
</tbody>
</table>

6.4 The statistically significant relationships between factors of distributed leadership and factors of school climate (Aim 5)

In order to answer this question analysis was made to find the regression and correlation coefficient of the factors of Distributed Leadership and School Climate.

First, the three factors of distributed leadership (factor related to principal, factor related to teachers’ involvement in school leadership and the factor related to evaluation) are entered as independent variables. The factor of school climate related to communication and management was entered as dependent variable to find the regression if any. The regression was found to be 48% (table 10).

<table>
<thead>
<tr>
<th>Table 10. Model summary</th>
<th>Model</th>
<th>R square</th>
<th>Adjusted R-square</th>
<th>St. error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.702</td>
<td>0.492</td>
<td><strong>0.485</strong></td>
<td>0.51273</td>
</tr>
</tbody>
</table>

Table 11 shows that the factors of Leadership related to Principal and Teachers’ Involvement in Leadership affect the factor of School Climate related to Communication.
The Relationship Between Distributed Leadership And School Climate In Public Secondary Schools In Cyprus

Table 11. Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized B</th>
<th>St.error</th>
<th>Beta</th>
<th>t</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.831</td>
<td>0.219</td>
<td></td>
<td>3.791</td>
<td>0</td>
</tr>
<tr>
<td>LPRINCIP</td>
<td>0.491</td>
<td>0.049</td>
<td>0.555</td>
<td>9.994</td>
<td>0</td>
</tr>
<tr>
<td>LINVOLVE</td>
<td>0.296</td>
<td>0.071</td>
<td>0.251</td>
<td>4.191</td>
<td>0</td>
</tr>
<tr>
<td>LOBSERV</td>
<td>-0.03</td>
<td>0.046</td>
<td>-0.035</td>
<td>-0.685</td>
<td>0.511</td>
</tr>
</tbody>
</table>

Then, the three factors of distributed leadership are entered as independent variables. The factor of school climate related to collaboration was entered as the dependent variable to find the regression if any. The regression was found to be 43% (table 12).

Table 12. Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>St. error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.664</td>
<td>0.441</td>
<td>0.433</td>
<td>0.50414</td>
</tr>
</tbody>
</table>

Table 13 shows that the factors of Leadership related to Principal and Teachers’ Involvement in Leadership affect the factor of School Climate related to Collaboration.

Table 13. Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized B</th>
<th>St.error</th>
<th>Beta</th>
<th>t</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.985</td>
<td>0.216</td>
<td></td>
<td>4.568</td>
<td>0</td>
</tr>
<tr>
<td>LPRINCIP</td>
<td>0.366</td>
<td>0.048</td>
<td>0.441</td>
<td>7.575</td>
<td>0</td>
</tr>
<tr>
<td>LINVOLVE</td>
<td>0.324</td>
<td>0.07</td>
<td>0.293</td>
<td>4.665</td>
<td>0</td>
</tr>
<tr>
<td>LOBSERV</td>
<td>0.052</td>
<td>0.045</td>
<td>0.064</td>
<td>1.142</td>
<td>0.255</td>
</tr>
</tbody>
</table>

Finally, the three factors of distributed leadership (factor related to principal, factor related to teachers’ involvement in school leadership and the factor related to evaluation) are entered as independent variables. It is also entered the factor of school climate related to students and it is considering as dependent variable to find the regression if any. The regression was found to be 17% (table 14).
Table 14. Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>St. error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.428</td>
<td>0.183</td>
<td>0.172</td>
<td>0.582</td>
</tr>
</tbody>
</table>

Table 14 shows that the factors of Leadership related to Principal and Teachers’ Involvement in Leadership affect the factor of School Climate related to Students.

Table 15. Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized</th>
<th>Coefficients</th>
<th>St.coeficients</th>
<th>t</th>
<th>sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.086</td>
<td></td>
<td></td>
<td>8.379</td>
<td>0</td>
</tr>
<tr>
<td>LPRINCIP</td>
<td>0.172</td>
<td>0.056</td>
<td>0.217</td>
<td>3.086</td>
<td>0.002</td>
</tr>
<tr>
<td>LINVOLVE</td>
<td>0.306</td>
<td>0.08</td>
<td>0.289</td>
<td>3.811</td>
<td>0</td>
</tr>
<tr>
<td>LOBSERV</td>
<td>-0.023</td>
<td>0.052</td>
<td>-0.03</td>
<td>0.437</td>
<td>0.663</td>
</tr>
</tbody>
</table>

6.5 Correlations

In order to investigate the relationship between the three factors of Distributed Leadership and the three factors of School Climate a correlation analysis had taken place. Table 16 presents the relationships among the six factors. The relationship between the factor of School Climate related to Communication and the factor of Distributed Leadership concerning Principal are high.

The relationship between the factor of School Climate related to Communication and the factor of Distributed Leadership concerning Teachers’ Involvement in School Leadership are medium.

The relationship between the factor of School Climate related to Collaboration and the factor of Distributed Leadership concerning Principal are medium.

The relationship between the factor of School Climate related to Collaboration and the factor of Distributed Leadership concerning Teachers’ Involvement in School Leadership are medium.

Table 16. Correlations between the factors of school climate and the factors of distributed leadership

<table>
<thead>
<tr>
<th></th>
<th>LPRINCIP</th>
<th>LINVOLVE</th>
<th>LOBSERV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>.670**</td>
<td>.508**</td>
<td>.200**</td>
</tr>
</tbody>
</table>
7. Discussion and interpretations

Some main observations and interpretations based on the findings of this research are presented afterwards. It is important to clarify at the outset that the survey findings arise from teachers’ and Deputy Heads’ responses to questionnaires in an effort to investigate the concept of distributed leadership in relation to the concept of school climate in Public Secondary Education in Limassol for the school year 2009-2010.

First, this study revealed that there are three factors of distributed leadership in Public Secondary Education in Cyprus. The first factor is related to the Principal, the second factor to the Teachers’ Involvement in leadership responsibilities and the third factor to Evaluation. The levels were medium (around three). This finding shows that leadership responsibilities are distributed in a medium rate and not to a great extent. So, a space for improvement is identified meaning that the leadership responsibilities can be distributed to a greater extent involving more teachers.

The results of this research question can be interpreted on the basis of the existing centralized system in Public Secondary Education in Cyprus. The system doesn’t allow distribution of leadership to a great extent according to everyone’s wish. Because of this system the Principal plays a certain role at his/her school. The same occurs with Deputy Heads and teachers.

The Principal distributes leadership to Deputy Heads according to the needs of the school and the Ministry of Education. The teachers’ involvement in leadership responsibilities is appeared to be of limited extent owing to the tiring timetable and the long hours spent at teaching, correcting, organizing etc. Some teachers are selected by the Principal to be responsible of a class, with certain duties involved.

Furthermore, the distribution of leadership depends not only on the Ministry of Education decisions but on the principals’ personalities as well. If for instance, some principals are authoritarian, they don’t promote the distribution of leadership tasks and responsibilities. This fact can be considered as one of the existing barriers to this kind of leadership. So, the evidence agree with Spillane et al. (2004) view that the...
growing interest on distributed leadership reflects the need to re-conceptualize leadership in schools. This can be achieved by exploring how leadership is spread across a variety of roles and processes.

Second, this study showed that there are three factors of school climate. The factors of Communication and Management, Collaboration and Students are identified by the teachers and the Deputy Heads that participated in the study. It is highly important that these three factors allow a smooth function at school and perform a pleasant climate. The level 3-4 reveals a satisfying result, but it still needs further improvement which demands effort on the part of all stakeholders.

The qualitative analysis of the teachers’ and Deputy Heads’ comments included some suggestions for school climate improvement. Teachers suggested that since school must be a pleasant place for students, it will be good if it included places where students can play games like pink-pong or cafeterias and places to relax. Also, they suggested more educational excursions to help students to develop environmental consciousness.

The results are in accordance to theories of main researchers like Campo (1993) that supports that a climate of effective schools must be characterized by collaboration among teachers especially in the process of planning and coordinating the school curriculum. Collaboration affects positively and improves the interpersonal skills of students, teachers, principals and the effectiveness of the organization. (as cited in Pashiardis, 2000).

Also, Pashiardis (2000) includes not only collaboration but communication as well among all participants. Communication has to do with all the stakeholders and includes any kind of verbal or written forms that must be clear for the participants in order to get the expected outcomes. She also recognized the level of students, since their behavior affects not only the school environment but the whole community as well.

Third, as for the demographic characteristics related to distributed leadership two statistical differences were observed concerning the age and the years in service at the factor of Teachers’ Involvement in Leadership responsibilities. The first statistical difference showed that teachers who are 29 years old or less noted lower means than teachers who are between 50-60 years old. The second statistical difference showed that teachers with 0-4 years experience note lower means than teachers with experience of 20 years or more.

From the findings it is obvious that younger, less experienced teachers feel excluded from leadership responsibilities. On the contrary, older, experienced teachers participate in leadership responsibilities. Maybe this statistical difference is owing to the fact that younger, less experienced teachers don’t have enough self-confidence to be involved in leadership tasks or they rely on the others, feeling that the responsibilities should be taken by them. Also, maybe the older, more experienced teachers have more self-confidence and they got used to be involved in leadership
The Relationship Between Distributed Leadership And School Climate In Public Secondary Schools In Cyprus

responsibilities. As for the principal, maybe he/she is used to involve more experienced teachers on leadership duties feeling secure that they are able to bring these tasks into completion.

So, according to the results firstly some efforts must be made to empower and involve newly appointed teachers in leadership in order to make them stop feeling excluded in relation to more experienced teachers. Secondly, efforts must be made to commit not only teachers and Deputy Heads but all the stakeholders of the school to take leadership responsibilities. Lambert (2002) also supports that school leadership must be viewed as shared responsibility for shared purpose of the community. She defines leadership as shared and collective endeavor that engages all members of the organization including administrators, teachers, parents and students. So, schools must empower their members by inspiring commitment. Also, schools as systems must enhance opportunities to benefit from the capacities of their different members.

Fourth, concerning the demographic characteristics that are related to school climate three statistical differences were observed. At the factor of school climate related to Students, teachers that are between 0-4 years at the specific school note higher means than the teachers who serve at the school between 5-9 years. This result can be explained by the fact that teachers that are at one school for fewer years may feel enthusiastic about the new school climate. They may have expectations from their students, and consequently try to do their best, but as the time goes by they become more realistic. They see that despite their efforts for student achievements and for high quality education whatever they do is not enough. Teachers that are at the same school for 5-9 years have realized that it is very difficult to improve student achievements and to create a pleasant environment for them.

The other two statistical differences are observed at the factor of Communication and Management. Teachers that are at the service between 10-14 years note lower means than teachers that are at the service for more than 20 years. These results show that maybe the instructions given by the principal and by their evaluator are not clear enough for the less experienced teachers. This has an impact on teachers since they may not realize the Principals’ expectations from them.

The third statistical difference is also observed at the factor of Communication and Management. It is observed that teachers note lower means than Deputy Heads. This statistical difference shows that there is better communication among the Principal and the Deputy Heads than among the Principal and the teachers. The Deputy Heads role is more important in management at school than teachers. Also, the Deputy Heads are acquainted with more knowledge concerning rules and regulations connected to their profession.

The results show that the Ministry’s rules, regulations and limitations are widespread among Deputy Heads and senior staff. Therefore, their awareness and consciousness of their position and duties help them acquire better knowledge of the Principal’s limitations to act a leading role at school.
As already mentioned, school climate and leadership are two factors that are associated with effective schools. Researchers have tried to investigate and establish relationships between dimensions of leadership and school climate (Deal & Peterson, 1990; Maehr, 1990; Waters, et al. 2004).

This study showed that there is a relationship between factors of distributed leadership and school climate. Specifically, two factors of distributed leadership (the factor related to principal and the factor related to teachers’ involvement in school leadership) affect the three factors of school climate (the factor related to communication and management, the factor related to collaboration and the factor related to students).

It is obvious that the way leadership is applied has an impact on school climate. It affects the behaviors and attitudes of all the participants. This implies that if there is an improvement on the way leadership is applied then a general improvement to the school climate will noted.

The atmosphere that governs the Principal’s and teachers’ spirit of involvement in leadership is of great significance. It may or may not allow communication, management, collaboration among the participants and between staff and students. This relationship may dominate and affect the climate at school. If the Principal’s and teachers’ involvement in leadership constitutes a crucial factor of collaboration, it will consequently affect communication and management. It will prove to be of high importance for students’ achievement both on academic issues and on better lifestyle and wellbeing.

8. Conclusions and recommendations

In conclusion, it can be inferred that the way leadership is applied has an impact on school’s overall climate as indicated by this survey’s statistically significant results. The distribution of leadership can affect teachers’ and students’ behavior and the relationships among them.

Since there is a lack of empirical evidence and lack of research related to the examination of the relationship between distributed leadership and school climate a recommendation is to develop future studies for further investigation.

The future studies can be based not only in questionnaires but on interviews and observations as well for an in-depth analysis of the study.

It will also be good if a longitudinal study will take place, maybe a doctorate that will examine the relationships of distributed leadership and school climate improvement. This study can be developed for at least three years and can examine each school year’s improvement.
REFERENCES


Humphreys E. (2010). Distributed leadership and its impact on teaching and learning. Education Doctorate. NUI Maynooth, Faculty of Social Sciences.


A HISTORICAL EXPLORATION OF JOB SATISFACTION: THEORIES AND WORKPLACE ASPECTS

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CDA College, Cyprus

ABSTRACT

The primary factors impacting employees’ job satisfaction, from the workplace environment and productivity to evolving quality management issues and organizational objectives, present managers with an ever-changing responsibility. Although various theories and workplace practices reveal the impact of job satisfaction in developing an effective workforce, employees’ personal characteristics and the fairness of the performance appraisal system could strengthen or weaken employees’ job satisfaction. A focus on the awareness of content and process theories of job satisfaction will help managers to be more effective with motivational tactics in order to improve employees’ job satisfaction.

Introduction

The term job satisfaction describes the differences between the employees’ actual reward, financial or non-financial, and the amount individual employees believe that they should receive for performing their duties and responsibilities (Robbins 1997). It refers to the individual’s attitude towards the specific duties and responsibilities they might have to complete (Robins, 1997). Indeed, a person with a high level of job satisfaction develops a positive attitude towards the job, leading to high productivity, while a person who is dissatisfied with the job might develop a negative attitude, leading to low productivity (Landy, 1999). Locke (1996) pointed out that job satisfaction might also be seen as the employee’s pleasurable or positive emotional state, which might result from the employee’s performance appraisal and contribution to the company’s overall productivity.
2. Job satisfaction and workplace behaviour

Clark, Georgellis and Sanfey, (1998) stated that job satisfaction is an attitude displayed by individuals who are affected by working conditions such as job autonomy and pay, and who display behaviour, either positive or negative, resulting from this attitude, such as absenteeism and high job performance correspondently. Employees’ morale and job involvement are related concepts to job satisfaction too (Hamermesh, 2001). Morale is an attitude of job satisfaction where employees, due to the company’s working conditions, are willing to continue with desire to pursue the organization’s goals and objectives (Frey & Stutzer, 2000). Schmidt (1999) related job satisfaction to several parameters that deal with individuals who are happy with the nature of their job. This kind of employee belongs to the highly motivated, productive and high morale group of people (Hamermesh, 2001). Yet, individuals who are greatly involved in the company’s daily decision-making on operational issues might experience greater emotions (positive or negative) and as a consequence might have higher levels of job satisfaction (Clark, 2001).

2.1. Importance of job satisfaction

Spector (1997) mentioned several reasons why modern companies and management should pay attention to the dimensions and the impact of job satisfaction on the workforce. Spector (1997) emphasized the necessity to understand that employees, as humans, deserve to be treated with respect irrespective of the individual’s race, gender, age, religion (the humanitarian perspective). The second reason is that job satisfaction might affect employees’ behaviour and workplace attitude, which has a direct influence on the healthy and organic functioning of the organization (the utilitarian perspective; Spector, 1997). Smither (1997) underlined that employees’ productivity, absenteeism and turnover have a direct relation to the level of employees’ job satisfaction. Smither (1997) noticed the interconnection of job satisfaction with the employees’ tardiness and deviant behaviour. Emphasis was given to the relationship between job satisfaction and employees’ tardiness while deviant behaviour might not be always clear. The third reason refers to a reflection of job satisfaction towards the quality of organizational functioning (Spector, 1997).

2.1.1. Working Environment

Initially, the term job satisfaction seems to be simple, referring to the case where a company promotes the environment and the concept that a satisfied employee might be a better employee, a more productive employee (Grove & Ostroff, 1990). However, Hamermesh (2001) mentioned that despite the several studies undertaken
to establish and to identify a positive and unmistakable correlation between high levels of job satisfaction and high levels of productivity, nothing conclusive has been proven yet. As a result managers and employees alike, invest and rely on job satisfaction practices in an immature way that leads directly and surely to the ideal status where the company promotes job satisfaction and in return employees are highly productive and performing (Fairbrother & Warn, 2003). However, the statement ‘satisfied employees are better performers’ is not always valid and under any circumstances none of the variables guarantees, depends or ensures the other variable (Savery, 2001).

2.1.2. Productivity and competitive advantage

Creating a satisfied workforce in any organization might be perceived as a positive element not only for employees but also for employers. Job satisfaction might be the nitro to boost overall company productivity and performance, leading to a lower rate of employee turnover (Tietjen & Myers, 1998). From the beginning of the 20th century industrialization led management to another dimension in order to realize the necessity to face human resources as the company’s human capital on which companies should invest, instead of facing the company’s human resources as another huge operational cost (Green & Heywood, 2000). Facing the company’s workforce as the human capital that might contribute to the company’s competitive advantage, the management might consider motivation tactics and policies to increase the levels of employees’ job satisfaction (Lazear, 2000). A motivated workforce, through financial and non-financial incentives, might increase performance and productivity, eliminate job absenteeism and enhance employees’ commitment towards the company’s goals and objectives (Lazear, 2000).

Consequently, the multi-challenging case of employees’ job satisfaction has forced researchers across varied scientific disciplines such as business administration, human resources management, psychology, and organizational behaviour, to collect data in order to define, measure, and interpret the significance of job satisfaction (Lazear, 2000). Due to the impact of job satisfaction on the individual, group and company’s overall performance and productivity, researchers over the years, invented and introduced a great number of measurement approaches, theories, and models to measure and explain the concept of job satisfaction (Frey & Stutzer, 2000). The main goal was to gain an understanding of the benefits that companies might receive when job satisfaction policies and practices could be effectively and efficiently adopted and implemented at the workplaces in order to maximize employees’ potentials by keeping the employees working interest matched with the company’s goals and objectives (Green & Heywood, 2000).
2.1.3. Organizational objectives and job satisfaction

Due to the vital contribution of job satisfaction in the development of a healthy working environment, the employers and the management made it a top priority to invent various methods of identifying and improving the level of employees’ job satisfaction (Clark, 2001). The primary goal of these methods was to set a common denominator between the employers and the employees’ individual goals and objectives (Clark, 2001). By setting a common denominator, employers and employees could pursue a mutual contribution and benefits, simultaneously creating a highly competitive, flexible and adaptive organization (Landy, 1999). In identifying the level of the job satisfaction intergradations in the company’s daily operations two distinct measurement approaches might be used: (a) the facet approach (which focuses on factors related to the job that contribute to overall satisfaction) and the global approach (which focuses on an individual’s overall job satisfaction; Smither, 1994). Spector (1997) stated that there are important reasons explaining why employers might pay attention to job satisfaction. The first reason supports the belief that people deserve to be treated with respect (the humanitarian perspective; Spector, 1997). The second reason emphasizes that job satisfaction affects employee behavior, which has an influence on the functioning of the organization (the utilitarian perspective). Productivity, absenteeism and high employees’ turnover are serious operational obstacles that might influence employees’ job satisfaction. Smither (1997) also notices the relation with tardiness and deviant behavior, but the author warns that the relationship is not always, clear, specific and straight forward. The third reason indicates that job satisfaction might be a reflection of the quality of organizational functioning, which might generate high or low employees’ performances and productivity (Spector, 1997).

2.1.4. Quality management issues

Cohen (1990) supported the thesis that employees experiencing job satisfaction might be more likely to be productive, and keep the same job for a longer time (Tett & Meyer, 1993). George and Jones (1996) underlined the impact of job satisfaction’s absence on the workforce as a dissatisfied labor-force might lead to high absenteeism, increased worker grievances and rampant employee turnover. Locus, Atwood & Hagaman (1993) mentioned that symptoms such as high absenteeism, increased worker grievances and rampant employee turnover might increase recruitment and selection expenses, training expenses and the most serious, demoralize the remaining organizational members. Davis (1992) linked job satisfaction with the company’s quality standards, especially in the service industry, where Heskett, Sasser, and Aschlesinger (1997) saw job satisfaction as a reflection
of the employees’ activities – an expansion of the organization’s abilities, capabilities and the interdependent cybernetic loop that affects the organization’s operational effectiveness and efficiency. Job satisfaction might be seen as value added – a prerequisite for the company’s healthy, sustainable development too (Davis, 1992).

3. Communication and job satisfaction

Communication had a twofold impact on employees’ job satisfaction mainly due to the advancement of mass communication means (Hamermesh, 2001). The invention of telecommunication means drastically reduced the personal, face-to-face communication between people in personal and professional life (Schmidt, 1999). Since the early 1980s, people have been subjected to a storm of new electronic technologies that have reshaped organizational communication style, contributing positively or negatively towards employees’ job satisfaction (Lund, 2003). Such new technologies include pagers, facsimile machines, electronic meetings, e-mail and voice messaging, and have made jobs more enjoyable, and interesting (Robbins, 1997). Electronic communication has revolutionized both the ability to access other people and to reach them almost instantly in order to perform duties and responsibilities more productively (Lund, 2003). Considering that information has become the absolute determinant factor for the company’s success, then the sharing of valid and timely information, as an essential communication and managerial tool kit among employers and employees and co-workers dictates the need to create an information platform where all involved parties might have access to the necessary information for day-to-day decision-making (Li, 2003).

3.1. Communication and decision-making

Different people in an organization have different information needs for decision-making (Green & Heywood, 2000). What is important to supervisors may not be as important to middle managers. Employees vary in the type of information they might need and the easier the employees’ access to the needed information, the higher the level of the employee satisfaction (Green & Heywood, 2000). As a result the company’s corporate management might design the company’s communication programs accordingly, by simultaneously increasing the employees’ job satisfaction (Robbins, 1997). However, having access to information and speedy communication might impose certain costs (Green & Heywood, 2000). Electronic mail does not provide the nonverbal communication component that a face-to-face meeting does (Schmidt, 1999). Video conferencing and electronic meetings eliminate the time needed for travelling and participation and as a result people with social contact and
interactions, rely on electronic communications and this is likely to lead to lower job satisfaction (Robbins, 1997).

4. **Measurement of job satisfaction**

Understanding the importance of forming and shaping a satisfied workforce, human resource management practitioners and academia, realized the necessity to develop measurement models that might be used in identifying the level of employees’ job satisfaction at the workplaces (Sarker, Crossman & Chinmeteepituck, 2003). However, Bergmann, Grahn, and Wyatt (1986) supported the thesis that despite the development of a considerable number of methods of measuring job satisfaction there is no best method. Bergmann et al., (1986) advocated the effectiveness of a method employed to measure job satisfaction to the involvement, implementation and contribution of the specific variables used, as well as the situation and the working-environmental conditions under which the variables were being measured.

4.1. **Facet and global approach**

Identifying the level of employees’ job satisfaction might assist in implementing more effective and efficient incentives and motives in achieving higher performance (Hom & Kinicki, 2001). As a result several measurement approaches, theories, and models have been developed, in order to measure and explain the concept of job satisfaction (Smither, 1994). Two distinct measurement approaches are mainly adopted: (a) the facet approach (which focuses on factors related to the job that contribute to overall satisfaction), and (b) the global approach (which focuses on an individual’s overall job satisfaction; Smither, 1994). Although, Smither (1994) mentioned that the facet approach is becoming more popular and more commonly used, Robbins (1997) suggested the global approach as a more complete approach, which should not be considered as methodologically flawed.

The facet approach focuses on factors related to the job that contribute to job satisfaction for all workers (Smither, 1994). Salary, promotion, and recognition within the workplace are factors included in the facet approach (Sarker et al., 2003). This approach suggests that workers might feel differently to each aspect of the job, but the total of each factor would constitute overall satisfaction (Bernal, Snyder & McDaniel, 1999). The global approach focuses on an individual’s overall job satisfaction (Smither, 1994). This approach suggests that job satisfaction is more than the sum of all of its parts and individuals can express their dissatisfaction with facets (with parts) of the jobs and still be generally satisfied with the overall job (Smither, 1994).
4.2. **Employees’ expectations and actual treatment**

Scarpello and Vandenberg (1992) stated that job satisfaction might be perceived as the discrepancy between an employee’s desire from the job and what the employee actually receives from the workplace. This relation is best illustrated in the Theory of Work Adjustment (Scarpello & Vandenberg, 1992). The theory explores the interactions between employees and the working environment-conditions as well as the correspondence between work personality and the work environment as the main explanation for the observed work adjustment outcomes (Scarpello & Vandenberg, 1992). Understanding the multiple dimensions of the working environment, employers might gain a better understanding in order to match the organizational needs with the individual needs such as recognition, fringe benefits and accomplishment to maintain and sustain appropriate working conditions satisfying simultaneously both employees and an organization’s needs (Bernal et al., 1999).

4.2.1. **Minnesota Satisfaction Questionnaire (MSQ)**

As a result, work adjustments might take place in order to satisfy both stakeholders’ needs. Job satisfaction might be measured by the degree to which the employee’s abilities and capabilities correspond to the new job requirements and to the reinforcements available in the work environment (Robbins, 1997). Weiss, Dawis, England and Lofquist (1967) contributed to the development of the Minnesota Satisfaction Questionnaire (MSQ), which is an instrument used to assess the levels of job satisfaction to a homogenous or heterogeneous group of individuals. MSQ might measure job satisfaction from various individual aspects of work and work environments and the most important MSQ might assist employers to identify the variables that employees might use to express the same levels of job satisfaction for completely different reasons (Mount & Frye, 2000).

4.3. **Job satisfaction as a subjective variable**

Economists perceived job satisfaction as a subjective variable (based on feelings) which is opposed to the objective variables (based on facts) that modern corporations have established (s.m.a.r.t. objectives; Ward & Sloane, 2000). Freeman (1978) admitted the complexity involved in job satisfaction as a subjective variable, because employees’ psychological state, status and perception will imply the level of job satisfaction in the end. However, Freeman (1978) has introduced job satisfaction as an economic variable, and supported the thesis that job satisfaction contains useful information to explain employees’ economic behavior as well as employees’ turnover. As proof of job satisfaction’s subjectivity Clark (1997) underlined
employees’ interpretation to a questionnaire’s job satisfaction response scale. Ward and Sloane (2000) supported the same opinion due to the fact that the level of job satisfaction of two workers reporting ‘very satisfied’ may differ, the same employees might be less likely to quit and more likely to be productive than workers reporting lower levels.

5. Determinants of job satisfaction

The multidimensional nature of the term job satisfaction has been investigated in many disciplines such as psychology, sociology, economics, and management sciences in order to explore the term in depth, understand and allow employers to interpret the outcomes (Steel, 2002). Employers have realized the necessity to offer incentives and motives as well as to keep employees satisfied, since employee satisfaction is directly related to employees’ behavior, such as productivity, performance and absenteeism (Pierce, Kostava & Dirks, 2001). The interrelation between the organization’s environmental structure, the work design and job satisfaction might determine the level of employees’ job satisfaction (Smith, 1996).

According to O’ Driscoll, Pierce, & Coghlan (2006), “unstructured work environment”, provides employees with autonomy at the workplaces and it allows employees to develop a closer relation to their job responsibility and a stronger commitment to their organizations. Without structure-job guidance, employees develop a deeper sense of responsibility towards their organization in terms of high performance and productivity. They invest in themselves for further professional development as work design allows them to develop possessive feelings of ownership, leading simultaneously to job satisfaction (Pierce et al., 2001).

5.1. Technology and employees’ involvement

According to O’ Driscoll et al., (2006), technology under the employee’s control, assists in performing everyday duties and responsibilities, can create more challenging jobs, offers an intrinsic motivation and above all it will increase the levels of job satisfaction. Indeed there is an important gap-difference that exists among the perceptions of participating in the decision making process and job satisfaction (Pierce et al., 2001). Pierce et al., (2001) supported the thesis that participation in the decision-making process does not necessarily guarantee both job satisfaction and employees high performance. Participation in the decision making process offers job satisfaction to employees as the participation itself is related to recognition, a reward for the employees’ achievements (Pierce et al., 2001). Employees are willing to engage in an extra citizenship role as the self-identity
motive is satisfied, enhancing organizational commitment and increasing the level of job satisfaction (Smith, 1997).

5.2. Challenging jobs

Locke (1976) defines job satisfaction as being “the individual’s subjective valuation of different aspects of their job”. The different aspects of work-related variables might involve mentally challenging work (Petrescu & Simmons, 2008). Mentally challenging work refers to the case where employees prefer jobs that offer opportunities to use individually acquired skills, developed capabilities and gained experience (Addison, Siebert, Wanger & Wei, 2000). Mentally challenging work refers also to a variety of tasks, freedom, and feedback the employees might require to know how well they have performed individual duties and responsibilities (Addison et al., 2000). Less challenging individual duties and responsibilities might create a status of boredom, frustration and even feelings of failure that might lead to job dissatisfaction and withdrawal behavior (Petrescu & Simmons, 2008). Having clear duties and responsibilities, fair allocation of work and a satisfactory workload might be crucial factors in determining the level of employees’ job satisfaction (Baker, Gibbons & Murphy, 1994).

5.3. Financial and non-financial rewards

Equitable rewards might have an impact on the level of employees’ job satisfaction and might turn out to be an important determinant factor for an employee’s job satisfaction (Smith, 1997). The design, development and implementation of a financial reward scheme (salaries and bonuses), ranking and promotional policies, should be concise, clear and specific due to the employees’ ambiguity and expectation of being treated equally, fairly and based on individual qualification and experience (Baker et al., 1994). When the company’s payroll is fair in relation to the individual skills of the employees and to the individual duties and responsibilities, job satisfaction might also be enhanced through supportive working conditions (Booth & Frank, 1999). Supportive working conditions refer to the case where employees are concerned with the organization’s work environment and personal comfort which might contribute to effective and efficient delivery of duties and responsibilities (Booth & Frank, 1999). Physical surroundings that host no danger or discomfort are preferred by employees (Baker et al., 1994). Additionally, workplace distance, clean and modern facilities, and adequate and advanced technological tools and equipment might become determinant factors of the level of job satisfaction. In relation to a safe and pleasant working environment this could
increase employees’ job satisfaction, performance and productivity (Batt & Appelbaum, 1995).

5.4. Physical and non-physical surroundings

Indeed, the physical surroundings should be supported and maintained by the human factors (Batt & Appelbaum, 1995). Supportive colleagues have a major contribution to the employee’s job satisfaction due to the fact that not only high wages and financial rewards might concern employees but also the social environment—the organizational culture, in which the labor-force devotes, strengthens and commits to the organization (Boselie & Van der Wiele, 2002). Friendly and supportive colleagues might be seen as an internal organizational supportive force which might, provide efficient two-way communication, use structured communication tools (telephone, e-mail, memos) and maintain good employee relationships. A supportive working environment might assist also, due to two-way communication, to the employees best job appointment, where clear and specific responsibilities equip the employee with the necessary means to perform certain tasks not only productively but also with satisfaction (Boselie & Van der Wiele, 2002).

5.5. Personal characteristics

Individual characteristics might be important determinants of the level of the employee’s job satisfaction as an individual worker is considered a source of variation in job attitudes and workplace behavior (Thomas, Buboltz & Winkelspecht, 2004). The variables that frame the individual’s personality in relation to the nature of the work might be a potential source of employee’s job satisfaction or dissatisfaction (Thomas et al., 2004). Multivariate and multidimensional personality traits and characteristics such as age, education level, family status, financial status, religion and gender might have an impact on the employee’s psychological world (Thomas et al., 2004). Lie and Wilbur (1985) stated that the employee’s life cycle and the career stage might influence the levels of job satisfaction too, due to individual needs (Barker, 1993). The fulfillment of individual needs at the workplace, based on personality traits and characteristics, might have a varied meaning and different perception for employee and employer, leading to undesired outcomes and negative impact at the level of job satisfaction (Lund, 2003). Glick, Jenkins and Gupta (1986) mentioned that besides the demographic variables that might have an impact on the level of job satisfaction, another two parameters might be seen as important job satisfaction determinant factors: (a) job related characteristics, and (b) organizational factors.
5.6. Performance appraisal

Fair performance appraisal for promotional purposes might be perceived as a determinant factor for the level of employees’ job satisfaction (Lund, 2003). Clear, specific predetermined criteria regarding employees’ promotions, are mandatory to provide the employees with an adequate explanation for the reasons for being promoted or not (Lund, 2003). Promotions are critical and vital motivational forces used by modern highly competitive organizations that aim for the long-term employment of talented and high skilled employees (Barker, 1993). Psychologists tried to define, explain and classify what motivates people at the workplaces (Lund, 2003). Since the Second World War, the Western nations have attempted to redesign, reconstruct and rebuild the drained industrial economies (Barker, 1993). During the '50s and '60s Human Relations were a field of extensive research and investigation in order to discover what exactly motivates and satisfies employees (Lund, 2003).

5.7. Motivation

The findings indicated that people who worked in organizations were more than just numbers and, if properly managed, could not only produce more, but also contribute more, in a multidimensional means (Barker, 1993). As a result, motivation became a major determinant of job satisfaction. Motivational theories related to job satisfaction are divided into two categories, content and process theories (Landsberg, 2003). Content theories consider individuals to possess the identical set of needs and for that reason set down the characteristics that should be present at the workplaces (Maslow’s Theory, Alderfer’s Erg Theory, Mumford’s Theory, 4 Herzberg’s Theory; Armstrong, 2007). Process theories indicate the variation in people’s needs and concentrate on the cognitive processes that cause these differences (Valence, instrumentality and expectancy theory; Armstrong, 2007).

6. Content Theories

6.1. Maslow’s theory

Maslow (1954) “suggested a hierarchy of needs” (a pyramid of progress; p. 54). Based on Maslow (1954) hierarchy of needs when an individual satisfies one need from the hierarchy, that need ceases to motivate the individual’s behavior and people are motivated by the need at the next upper level. The hierarchy of needs theory was not intended as an explanation of motivation in the workplace (Armstrong, 2007). The theory proposes that employees might tend to demand more
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benefits from the employers. When they have satisfied their subsistence needs, they strive to fulfill security needs (Armstrong, 2007). These needs, starting from the most basic, are (Robbins, 1997, p. 213):

- Physiological needs such as hunger and thirst form the first level on the hierarchy.
- Security needs such as shelter and protection represent the next level.
- Social needs emerging from the human nature for establishing satisfactory and supportive relationships represent the next level.
- Self – esteem needs for recognition and a belief in oneself are the next level.
- Finally, the development might lead to the need to understand one’s full potential, which is termed self – actualization. Only a small percentage of the population-employees accomplish this goal.

6.2. Alderfer’s ERG theory

Robbins (1997) mentioned the Clayton Alderfer's revision of Maslow’s Hierarchy of Needs, called the ERG Theory which tends to generate a pyramid. Existent needs might motivate employees at a more basic point than relatedness needs, which, in turn replace growth needs. The letters ERG represent these three levels of needs while Alderfer (1972) suggests that individual needs can be divided into three distinct groups:

- Existent needs that deal with dietary and material requirements of the employees
- Relatedness needs refers to the desire people have for maintaining interpersonal relationships (e.g. with family, friends and work colleagues).
- Growth needs related to psychological developments.

Alderfer’s theory varies from the Maslow theory (Landsberg, 2003). Alderfer stated that it could be more effective to think that needs are continuous rather than hierarchical; from concrete existence needs to least concrete growth needs and argued that you could move along this in either direction (Landsberg, 2003). Thus, a contradictory approach emerges between Maslow and Alderfer theories due to the argument that a satisfied need might become less important to an individual (Maslow theory), and the opinion that relatedness or growth needs might tend to be more important when satisfied (Alderfer; Landsberg, 2003). However, the team -
working environment might continue to motivate employees that might not necessarily be superseded by growth needs.

### 6.3. Mumford’s theory

Mumford’s assumption was that employees had needs that related to the nature of their work and did not see an individual job as a means to an end (Landsberg, 2003, p. 23). Mumford argues that workers have:

- Knowledge needs, and through work employees might utilize individual knowledge and skills.
- Psychological needs including recognition, accountability, position and advancement.
- Task needs, which might comprise significant job and workplace autonomy.
- Moral needs that need to be treated respective of the way that employers wanted to be treated.

### 6.4. Herzberg’s Theory

Like Maslow, Herzberg believed that people had higher and lower levels of needs. Hertzberg believed that these two levels of needs were equally important for job satisfaction however they worked in different ways. If the lower needs are inadequate, workers will quickly become dissatisfied. However, as these needs are satisfied trying to motivate staff by just adding more hygiene factors such as wages or work hours there is an inefficient and short term solution. A better way would be to appeal to their higher level needs by giving them more responsibility or giving them greater scope for advancement. In this way the individual’s goals are satisfied as well as those of the organization. Job enrichment programs are where jobs are redesigned to incorporate these motivating factors. Unlike Maslow who had five levels of needs Hertzberg has divided human needs into two categories (Robbins, 1997, p. 133).

- Hygiene factors - "environmental factors" such as salary, inter-personal relationships, working conditions, style of leadership and types of supervision, security, type of work, working hours, status. Hygiene factors are so called because they are seen to work like preventative medicine. They stop you from getting sick but do not really do anything to make you the healthiest that you can be, or better than you were. In a management context
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this means that hygiene factors don't motivate people to do their very best but they are needed to stop people becoming dissatisfied with their jobs.

- Motivating factors - factors within a job that allow for such things as achievement, responsibility, recognition, advancement, challenge. Hertzberg suggests that these factors are the ones which encourage people to strive to do well, in other words to motivate them to do their best.

7. Process Theories

7.1. Equity theory

Spector (1997) mentioned that Equity theory refers to the cognitive process where employees might look around in order to observe the effort that other employees might put into the individual work and what rewards follow them. This social comparison process is driven by the concern for fairness and equity (Stride, Wall & Catley, 2007). Adams (1965) research confirms equity theory as one of the most useful frameworks for understanding work motivation.

7.2. Valence, instrumentality and expectancy (VIE) theory

Vroom’s (1964) argument was that crucial to motivation at work was the perception of a link between effort and reward which might lead to job satisfaction. VIE theory might be perceived as a process in which individuals calculate first whether there was a connection between effort and reward and then the probability (valences) would follow from high performance (instrumentality; Stride et al., 2007). The individual’s abilities, traits, role perceptions and opportunities satisfy the motivational force (Spector, 1997). As a result, both forms have contributed in a way that the process theory has been used to emphasize the effects of cognition at the workplaces and the perceptual processes in achieving objective work conditions (Stride et al., 2007). The management needs to pay attention to four primary aspects of the subordinate’s perceptions:

- Concentration on critical expectancy values (effort vs. performance.)
- Managers should determine what outcome an employee values.
- Managers need to link the value of the employees’ reward according to the individual performance.
- Managers need to establish detection mechanisms that might assist in ensuring that wage and salary rates are not perceived as inequitable.
7.3. Knowledge of results and goal-setting

Robbins (2007) underlined the importance and the impact from positive motivational benefits following the knowledge of results for many organizations as organizations still provide employees with little or no information about individual performance. Locke (1968) offers the theory of goal–setting as a means of motivation. Hence, goals directly assist and provide guidelines for deciding how much effort to put into each activity when there are multiple goals. Employees with active participation in the goal–setting process might increase the sense of control and fairness in the process. Indeed, feedback might influence the level of employee motivation and learning, and by implementing feedback systems there might be wider implications (Stride et al., 2007). Feedback can affect the relationship between employees and managers by disrupting existing authority structures (Spector, 1997). Guirdham (1995, p. 33) stated that the feedback outcomes might be more effective when feedback is:

- Generally positive – reward is more effective than punishment.
- Well timed – as soon as possible.
- Control – feedback of the individual-employee behavior
- Specific feedback and not general.
- Publicly observed.
- Sensitive in a way that might not develop the individual’s defense mechanisms.

8. Variance theory and model of job characteristics

Two theories of job satisfaction are the variance theory and the model of job characteristics (Daniels et al., 1997). Variance theory relies on the subjective point of view that if an employee who wants x from the work, the employee might be satisfied to the extent that the job provides the employee with x (Daniels et al., 1997). The major problem with this theory is defining what people want from their work. The job characteristic model suggests the causes of job satisfaction are objective characteristics. Hackman and Oldham (1975) believe that jobs related tasks differ to the degree to which the job involves five important dimensions: (a) skill variety, (b) task identity, (c) task significance, (d) autonomy, and (e) task feedback. Hackman and Oldham (1975) supported the thesis that if jobs tasks could be design in a way that increases the presence of these characteristics three critical psychological factors might affect employees: (a) experiencing meaningfulness of work, (b) experiencing responsibility for work outcomes, and (c) knowledge of the
results of work activities. According to Hackman and Oldham (1975), when these critical psychological states are experienced, work motivation and job satisfaction will be high.

9. Conclusion

The advancement of the socio-economic status led to the need to reconsider and to redesign the management approach towards employee’s job satisfaction. People-employees are now being raised in a society where careers have one of the most important roles in the individual’s lives. Considering that most people spend 1/3 of the day, working, they might really desire to pay more attention to one’s level of job satisfaction. Modern management might understand the impact of job satisfaction on high performance and productivity. Issues and matters of developing a working environment which promotes the necessary working conditions that allow employees to enjoy job related tasks, accomplish personal goals and the desire for continuous contribution towards the organization’s high productivity, are simultaneously emerging the need to promote policies and practices that favor job satisfaction. In order to foster an organizational culture that cultivates the seeds of job satisfaction a modern and pro-active management might consider the determinant factors of job satisfaction at the workplaces as well as the communication means through which employees might be positively influenced in boosting performance and productivity. However the theories about job satisfaction might not be successfully implemented unless control and measurement mechanisms might be established to secure the outcome of job satisfaction.

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ΜΙΑ ΜΕΤΑΜΑΘΗΜΑΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ ΜΕΤΑΘΕΤΙΚΩΝ ΔΑΚΤΥΛΙΩΝ

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Εισαγωγή

Παρουσιάζουμε μια μεταμαθηματική συζήτηση της απόδειξης ενός θεωρήματος που παρουσίασε στο συνέδριο της Κυπριακής Μαθηματικής Εταιρείας το 2007 ο Παντελής Δαμιανού.

Εδώ και αρκετούς αιώνες ο Γερμανός Μαθηματικός και Φιλόσοφος Λάιπνιτς διατύπωσε την εξής πρόταση:

«Τίποτα δεν είναι πιο σημαντικό από το να βλέπουμε τις πηγές της επινόησης που είναι, κατά την γνώμη μου, πιο ενδιαφέρουσες από την ίδια την επινόηση.»

Και σε αυτή την περίπτωση όπως και σε πολλές άλλες πιστεύω ότι δεν έχουν κατανοηθεί και αξίοποιηθεί πλήρως οι ιδέες αυτού του μεγάλου ερευνητή.

Σε αυτή την εργασία προσπαθούμε να κοιτάξουμε από την οπτική γωνία της ιδέας αυτής του Λάιπνιτς.

Αντικείμενο μας είναι μια πολύ σύντομη και πολύ ενδιαφέρουσα εισήγηση του Παντελή Δαμιανού που έγινε στο Συνέδριο της Κυπριακής Μαθηματικής Εταιρείας το 2007 με τίτλο «ΜΕΤΑΘΕΤΙΚΟΙ ΔΑΚΤΥΛΙΩΝ». Η εισήγηση είναι αρκετά σύντομη, πράγμα που την κάνει πιο ενδιαφέρουσα, γιατί τουλάχιστον εκ πρώτης όψεως, κάνει πιο εύκολη την προσπάθεια μας.

Στην εισήγηση αυτή του Π. Δαμιανού παρουσιάζεται η επινόηση της λύσης μιας άσκησης πάνω σε δακτυλίους από ένα βιβλίο του Herstein. Η πρώτη προσπάθεια του έγινε το 1996 και δεν οδήγησε σε ολοκληρωμένη λύση και η δεύτερη προσπάθεια του έγινε 10 χρόνια αργότερα οπότε ολοκλήρωσε την λύση.

Η άσκηση ζητούσε να δειχθεί ότι αν σε έναν δακτύλιο ισχύει ότι $x^3 = x$ ο δακτύλιος είναι μεταθετικός.

Η εισήγηση ξεκινά με την απόδειξη της απλούστερης πρότασης που λέει ότι αν $x^2 = x$ ο δακτύλιος είναι μεταθετικός. [Πολλές φορές αποδεικνύεται βοηθητικό και καρποφόρο, τόσο στην έρευνα όσο και στη διδασκαλία, το να
Μια Μεταμαθηματική Προσέγγιση Μεταθετικών Δακτυλίων

προσπαθήσουμε πρώτα μια πιο απλή έκδοση ενός δύσκολου προβλήματος. Αυτή η
tακτική ακολουθήθηκε σε αυτήν την εργασία και όντως έδωσε καρπούς.]
Η απόδειξη όπως παρουσιάστηκε στην εισήγηση έχει κατά λέξη ως εξής:

2x = (2x)^2 = (x + x)^2 = x^2 + 2x^2 + x^2 = 4x^2 = 4x

συνεπώς 2x = 0 ∀ x ή ισοδύναμα x = -x ∀ x. Αν τώρα χ, ψ είναι τυχαία στοιχεία
tου δακτυλίου, τότε

x + y = (x + y)^2 = x^2 + xy + yx + y^2 = x + y + xy + yx,

και έτσι

xy = -yx = yx ∀ x, y. Εδώ ολοκληρώνεται η απόδειξη.

Η πιο πάνω ακολουθία συλλογισμών και πράξεων όπως και σε κάθε άλλη
μαθηματική απόδειξη διατυπώνεται σε μια λογική, καθαρά ορθολογιστική σειρά
όμως το βαθύτερο ερώτημα που μας ενδιαφέρει εδώ είναι η πηγή της έμπνευσης και
η πραγματική κίνηση και οι διεργασίες που έκανε η σκέψη, η συνείδηση και το
μυαλό για να παράξει την πιο πάνω απόδειξη και την πιο πάνω σειρά συλλογισμών.

Εδώ αναφέρω κάποιες γενικές ιδέες που εκφράζουν διάφορες φιλοσοφικές σχολές.

• Η κίνηση της σκέψης πίσω από την απόδειξη μπορεί να μην είναι ούτε λογική ούτε
  ορθολογιστική ούτε να χαρακτηρίζεται από κάποια καθαρή σειρά ή διαδοχή.
  Μπορεί τα φαινόμενα που γίνονται σε αυτό το στάδιο να βρίσκονται πέρα από τα
  μαθηματικά; Σίγουρα αρχικά η αναζήτηση κινείται στα σκοτεινά ψάχνοντας με
  αβεβαιότητα στο κενό μέχρι να βρει κάποιο δρόμο.

• Μπορεί να απαντηθούν τέτοιου τύπου ερωτήματα, δηλαδή ερωτήματα που
  αναφέρονται στις πηγές της έμπνευσης, μέσα στην γλώσσα, ή μήπως βρίσκονται
  πέρα από τα όρια της γλώσσας;

• Κατά τον Βινκεστάιν τα πιο σημαντικά πράγματα και αυτά που μετρούν δεν
  εκφράζονται μέσα στην γλώσσα αλλά βρίσκονται πέρα από αυτή. Μήπως
  αναζητώντας τις πηγές της σκέψης, της έμπνευσης και της επινόησης περνάμε σε
  ένα χώρο πέρα από την γλώσσα; Μήπως όπως πίστευε ο Νίτσε είναι αδύνατο να
  κατανοήσουμε το πως λειτουργεί το ανθρώπινο μυαλό;
• Επειδή το ερώτημα πάνω στις πιθανότητες της έμπνευσής άπτεται του ερωτήματος για τα όρια της σκέψης, αναφέρουμε την άποψη του Βιντεκστάιν, ότι δεν μπορούμε να θέσουμε το όριο της σκέψης αφού τότε θα έπρεπε να μπορούμε να σκεφτούμε την άλλη πλευρά δηλαδή να σκεφτούμε αυτό που δεν μπορούμε να σκεφτούμε.

• Υπάρχει κάτι μέσα στην ψυχή και στο μυαλό που υποστηρίζει, τροφοδοτεί και θεμελιώνει την μαθηματική εμπειρία αλλά βρίσκεται βαθύτερα από αυτήν και δεν ανάγεται ούτε σε αυτήν ούτε στα μαθηματικά και εκεί βρίσκονται και οι πιθανότητες της επινόησης;

• Αν αναθέταμε την λύση του προβλήματος σε μια μηχανή Turing αυτή θα είχε στην μνήμη της την τυποποιημένη θεωρία των δακτυλίων μαζί με την υπόθεση \( x^2 = x \ \forall x \). Θα παρήγαγε, με τη βοήθεια των κανόνων συμπερασμού που διαθέτει, όλες τις δυνατές προτάσεις, ξεκινώντας από το τι έχει αποδηκυμένο στη μνήμη της, αρχίζοντας από προτάσεις μικρού μήκους και προχωρώντας σε προτάσεις μεγαλύτερου μήκους μέχρι να παραγάγει την πιο πάνω λύση η κάποια ισοδύναμη της.

Αυτή η ιδέα βάζει μέσα στο παιχνίδι την τεχνική νοημοσύνη και φυσιολογικά έτσι σκεπτόμαστε αν υπάρχουν αναλογίες ή ομοιότητες ανάμεσα στις νοητικές διεργασίες που έγιναν για να επινοήσουν την πιο πάνω απόδειξη και στις διεργασίες που θα ακολουθούσε η ανάλογη μηχανή Turing.

Αναλύοντας την πιο πάνω απόδειξη μπορούμε να πούμε (πάντα εκ των υστέρων) ότι αποτελείται από τα εξής δύο γεγονότα:

\( x = -x \) ή \( x + x = 0 \ \forall x \)

\( xy = -yx \) ή \( xy + yx = 0 \ \forall x, y \)

συνδυάζοντας τα προκύπτει αμέσως το ζητούμενο \( xy = yx \ \forall x, y \).

Το εντυπωσιακό εδώ είναι ότι τα δύο πρώτα γεγονότα χωρίστα το καθένα φαίνονται να είναι άσχετα με το ζητούμενο. Οπότε πιθανότατα ως γεγονός γιατί και πως κάποιος να σκεφτεί να αποδείξει κάτι το οποίο τουλάχιστο εκ πρώτης ύψους δεν σχετίζεται με αυτό που επιδιώκει;

Κοιτάζοντας τώρα από πιο κοντά τις δύο σχέσεις \( x + x = 0 \ \forall x \) και \( xy + yx = 0 \ \forall x, y \) παρατηρούμε ότι πίσω και από τις δύο βρίσκεται η \( x^2 = x \ \forall x \) που είναι το κύριο δεδομένο της άσκησης. Θέτοντας στη θέση του \( x \) το \( x + x \) αποδεικνύεται σχεδόν αμέσως η πρώτη ενώ θέτοντας στη θέση του \( x \) το \( x + y \) αποδεικνύεται η δεύτερη.
Μετά από αυτά μπορούμε να παράγομαί κάποια σενάρια για το πως σκέφθηκε κάποιος ή για το πως θα μπορούσε να σκεφθεί κάποιος άλλος για να παράξει την συγκεκριμένη απόδειξη. Φυσικά μεγάλο μέρος από τα γραφόμενα είναι εντελώς υποθετικά και πιθανώς να μην έχουν καμία σχέση με το πως εσκέφθη ο ίδιος ο δημιουργός της εργασίας. Κάποια από αυτά τα σενάρια πιθανώς να χρησιμοποιούν περισσότερη εξωτικά-intelligence ή να είναι πιο sophisticate από κάποια άλλα. Είναι σημαντικό να επινοήσουμε μεθόδους για να μπορούμε να συγκρίνουμε και να αξιολογούμε από αυτή την άποψη τα διάφορα σενάρια και τις διάφορες λύσεις.

Σενάριο 1: Κάποιος που είτε από έναν πείρα θα έβλεπε ότι οι δύο σχέσεις \( x + x = 0 \) και \( xy + yx = 0 \) οδηγούν στο ζητούμενο θα προσπαθούσε συνειδητά πλέον να τις αποδείξει εξελικώντας από το θεμελίωδες δεδομένο \( x^2 = x \forall x \). Πάντως, είπε ότι χρειάζεται πολύ φαντασία για να σκεφθεί κάποιος να αποδείξει την \( xy = yx \) αποδεικνύοντας την \( xy = -yx \). Φυσικά εδώ επισήμαναμε τις λέξεις έναντι, πείρα, έμπνευση, φαντασία κλπ οι οποίες δεν είναι καθαρό πως μπορούν να αναχθούν σε άλλες, ίσως απλούστερες, που θα μπορούσαν ίσως να αγκαλιαστούν από τα μαθηματικά για να τυποποιηθούν οπότε θα μπορούσε να κατανοηθούν μέσω των μαθηματικών οι πιγές της έμπνευσης.

Σενάριο 2: Κάποιος άλλος θα μπορούσε να κάνει την πιο απλή σκέψη ότι η απόδειξη θα πρέπει να στηρίζεται κύρια στην βασική υπόθεση \( x^2 = x \forall x \). Ετσι θα προσπαθούσε να παράξει καινούργιες σχέσεις και \( \forall x \) ψάχνοντας να ελπίζει ότι κάποια στιγμή θα εμφανιστεί το ζητούμενο. Για να παράξει τόσο καινούργιες σχέσεις, ο μοναδικός ισως τρόπος θα ήταν στη θέση του να θέσει κάποια παράσταση και να αναπτύξει την σχέση που προκύπτει. Αφού τόσο οι παραστάσεις \( x + x \) και \( x + y \) είναι από τις απλούστερες που μπορεί να σκεφθεί κάποιος είναι πολύ πιθανόν ότι σύντομα θα τις χρησιμοποιούσε. Θα μπορούσε ακόμα να φθάσει στη σχέση \( xy = -yx \) και να μην δει την σημασία της.

Θα χρειαζόταν και πάλι τύχη, φαντασία έναντι κλπ για να προχωρήσει σωστά. Το σενάριο αυτό μοιάζει περισσότερο με την λειτουργία της μηχανής Turing παρά το προηγούμένο. Εδώ το μυαλό ή η σκέψη παίζει με το βασικό δεδομένο και κατά τρόπο μισό-τυχαίο, μισό-δινημοτή παράγει ότι μπορεί να παραχεί μέχρι να φθάσει στο ζητούμενο.

Σίγουρα υπάρχουν και πολλά άλλα σενάρια και αυτό που ακολούθησε η σκέψη του Παντελή Δαμιανού για να μας δώσει την λύση μπορεί να είναι κάτι τελείως διαφορετικό.
Θα στραφούμε στο πιο δύσκολο μέρος. Δεν θα δώσω κατά γράμμα την απόδειξη του Π. Δαμιανού αλλά θα προσπαθήσω να δώσω μιαν έκδοση της η οποία αξιοποιεί κάποια από τα προηγούμενα σχόλια κυρίως με βάση το δεύτερο σενάριο.

Το κύριο δεδομένο τώρα είναι \( x^3 = x \forall x \). Τι μπορούμε να παράγομε από εδώ;

Επαναλαμβάνοντας το κόλπο με το \( \chi + \chi \) έχουμε:

\[
2x = x + x = (x + x)^3 = x^3 + 3x^2 x + 3xx^2 + x^3 = 8x \Rightarrow 6x = 0. \quad ( \text{Που έχει σαν ανάλογο το } 2x = 0 \text{ της προηγούμενης περίπτωσης})
\]

Ας δοκιμάσουμε τώρα το \( x + y \):

\[
x + y = (x + y)(x^2 + xy + yx + y^2) = x^3 + x^2 y + x^2 y + yx^2 + yx^2 + yxy + y^2 x + y^3
\]

\[
0 = x^2 y + yx^2 + yx^2 + yxy + y^2 x.
\]

Μέχρι εδώ ουσιαστικά επαναλαμβάνομε ιδέες της προηγούμενης λύσης άρα δεν τίθεται θέμα καινούργιας έμπνευσης. Το επόμενο βήμα είναι ελάχιστα διαφορετικό. Αντί του \( x + y \) δουλεύουμε με το \( x - y \):

\[
x - y = (x - y)(x^2 - xy - yx + y^2) = x^3 - x^2 y - xxy + yx^2 - yx^2 - yxy + y^2 x - y^3
\]

\[
0 = -x^2 y - yxy + yx^2 - yx^2 + yxy + y^2 x.
\]

Τώρα ανοίγουμε μπροστά μας διάφορα ενδεχόμενα και κατά τα φαινόμενα ο αριθμός τους θα μεγαλώνει καθώς προχωρούμε. Η περιπλοκότητα αυξάνει.

Πάντως αυτή την στιγμή νοιώθω πελαγωμένος και δεν ξέρω ποιο είναι το ποιό σοφό βήμα. Θα μπορούσα να αρχίσω να κάνω πράξεις χωρίς να προσπαθήσω να εκτιμήσω εκ των προτέρων την χρησιμότητά τους όπως θα έκανε μια μηχανή Turing αλλά το ενδεχόμενο ότι μπορεί να κάνω κύκλους και να μην προχωρώ μου φέρνει ναυτία και νοιώθω σαν αυτόν που έχει χαθεί μέσα στη Σαχάρα. Η μηχανή Turing από την άλλη δεν θα ανησυχούσε για τον χρόνο ούτε και θα περιφρονούσε καμία φόρμουλα, θα έγραφε όλες αρχιζόντας από τις πιο μικρού μήκους και προχωρώντας προς τις πιο μεγάλου μήκους. Ας μιμηθώ την μηχανή και ας κάνω
κάτι. Να προσθέσω ωσ και να αφαιρέσω τις πιο πάνω σχέσεις; Ας κάνω και τα δύο χωρίς να το πολυσκοτίζουμε όπως θα έκανε η μηχανή.

\[ 2(xy^2 + yxy + y^2x) = 0 \] όταν προσθέσω

\[ 2(x^2y + xyx + yx^2) = 0 \] αφαιρώντας

Δεν νοιώθω καθόλου ότι προχωρώ προς την σωστή κατεύθυνση. Δεν βρίσκω τη κίνηση να κάνω για να προχωρήσω. [Νομίζω ότι αυτό το σημείο είναι από τα πιο δύσκολα αν όχι το πιο δύσκολο]. Εδώ ο Παντελής Δαμιανού πολλαπλασιάζει από αριστερά και δεξιά με \( \chi \) την δεύτερη σχέση. Φαίνεται μια σωστή κίνηση αφού έτσι θα εμφανιστεί το \( x^3 \):

\[ 2(x^3y + x^2y + x^3y^2) = 0 \] και \[ 2(x^2y + x^2y^2 + yx^3) = 0 \] Τώρα πια φαίνεται ότι η κίνηση αυτή είναι πράγματι καλή και διότι εμφανίστηκε το \( x^3 \) αλλά και επιπλέον διότι οι άλλοι δύο όροι στις πιο πάνω σχέσεις είναι πανομοιότυποι. Από εδώ φαίνεται ότι τώρα πρέπει να αφαιρέσουμε τις πιο πάνω σχέσεις για να πάρουμε \[ 2(xy - yx) = 0 \]. 

Αυτό είναι ακριβώς το σημείο στο οποίο είχε φθάσει Π. Δαμιανού στην πρόταση του προσπάθεια το 1996. Σε αυτό το σημείο αφήνει την προσπάθεια και επιστρέφει 10 χρόνια αργότερα για να ολοκληρώσει την λύση. Από αυτό θα μπορούσε να πει κανένας ότι το κομμάτι που μένει είναι αυτό που απαιτεί την περισσότερη ή την πιο σημαντική επινόηση.

Για να πούμε την αλήθεια το ότι η πιο πάνω κίνηση, αλλά και οποιαδήποτε άλλη, είναι καλή φαίνεται, με βεβαιότητα μόνο εκ των υστέρων επειδή μόνο εκ των υστέρων επιβεβαιώνεται ότι είναι όντως μέρος του συνόλου των κινήσεων που δίνουν την λύση. Φυσικά έχοντας την ανάλογη πείρα ένας καλός μαθηματικός νοιάζεται ότι διασχίζονται στην πράγματη κίνηση, από τον υστέρον ότι κάποιες κινήσεις είναι καλές και θα βοηθήσουν στην λύση. Δεν μπορεί όμως να είναι απόλυτα βέβαιος ή για να το θέσω αλλιώς δεν μπορεί να αποδείξει, πιστεύω, την ορθότητα της διαίρεσης του χωρίς την ολοκληρωμένη λύση.

Έχοντας δείξει ότι \[ 2(xy - yx) = 0 \] και επιδιώκοντας να δείξουμε ότι \( xy - yx = 0 \) μια λογική κίνηση θα ήταν να δείξουμε πρώτα ότι \[ 3(xy - yx) = 0 \] . Εδώ τίθεται το ερώτημα γιατί να είναι αυτή λογική κίνηση. Η μόνη απάντηση που μπορώ να δώσω είναι ότι όταν οδηγούμαστε έτσι άμεσα στην λύση όμως αυτή η απάντηση μπορεί να μην είναι σωστή γιατί η συγκεκριμένη κίνηση μπορεί να είναι μόνο
φαινομενικά λογική. Θα μπορούσε π.χ. για να αποδείξεμε την $3(xv - yx) = 0$ να χρειαζόταν να αποδείξεμε προηγούμενα την $xv - yx = 0$.

Επιπλέον να σημειώσω ότι μια κίνηση που θεωρείται λογική θεωρείται ότι δεν απαιτεί πολύν επινόηση για να την επιδιώξεμε. Παρόλα αυτά όμως μπορεί να απαιτεί πολύ επινόηση για να πραγματοποιηθεί.

Την ώρα που έγραφα αυτές τις γραμμές δεν θυμόμουν όλες τις λεπτομέρειες της λύσης που υπολείπεται. Αποφάσισα να προσπαθήσω μόνος μου να συμπληρώσω τα κενά και να δώ αν μπορώ να ολοκληρώσω την λύση. Αντιγράφω από το χαρτί ότι ακριβώς έκανα:

$x + x^2 = (x + x^2)^3 \forall x$ αυτό το θυμόμουν.

$= x^3 + 3x^4 + 3x^5 + x^6 = x + 3x^2 + 3x + x^2 = 4x + 4x^2 \text{ άρα}$

$3(x + x^2) = 0$ έπεται

$3[x + y + (x + y)^2] = 3(x + y + x^2 + xy + yx + y^2) = 3(xy + yx) = 0$

Αντί της $3(xy - yx) = 0$ καταλήγουμε στην $3(xy + yx) = 0$. Για να διορθώσω το κακό προσπαθώ τα πιο κάτω

$3[x - y + (x - y)^2] = 3(x - y + x^2 - xy - yx + y^2) = 3(- y + y^2) = 0$ δηλαδή καλήγομε σε κάτι που ήδη γνωρίζαμε την $3(x + x^2) = 0$ με $x = -y$. Στην συνέχεια δούλεψα πάνω στις

$3(-x - y + (x + y)^2) = 0$ και

$3[-x + y + (x - y)^2] = 0$ όμως τίποτα καινούργιο δεν βγήκε. Κατάλαβα ότι δεν οδηγούμουν στο ζητούμενο με αυτή την πορεία. Ένοιωθα να είμαι σε αδιέξοδο όποτε ξαφνικά θυμήθηκα ότι είχαμε προηγούμενως αποδείξει την σχέση $6x = 0 \ \forall x$ την οποία δεν κατάφερα να αξιοποιήσω μέχρι τόμα. Μόλις πέρασα αυτή η σκέψη από το μυαλό μου κατάλαβα ότι είχα τελειώσει χωρίς και να γράψω τίποτε πάνω στο χαρτί. Όντως οι $3(xy + yx) = 0$, $6yx = 0$ οδηγούν αμέσως στην $4x = 0$.

Να σημειώσω ότι είχα προηγούμενως σπαταλήσει πολύ προσπάθεια και χρόνο στο να συνδυάσω δημιουργικά τις $6x = 0$ και $2(xy - yx) = 0$ χωρίς όμως κανένα αποτέλεσμα γιατί δεν μπορούσα να δημιουργήσω τον συντελεστή $3$ που χρειάζεται για την $3(xy - yx) = 0$.

Κοιτάζοντας εκ του ασφαλούς και εκ των υστέρων παρατηρούμε ότι το τελευταίο κλειδί της λύσης μας έρχεται και πάλι παίζοντας με το θεμελιώδες δεδομένο $x = x^3$ και θέτοντας όπου $x$ το $x + x^2$, μιαν όχι ιδιαίτερα περίπλοκη παράσταση.

Προσπαθήσαμε να τυποποιήσουμε εκ των υστέρων την αποδειξή του Π. Δαμιανού μπορούμε να πούμε ότι αποτελείται από τους εξής δομικούς λίθους:

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Μια Μεταμαθηματική Προσέγγιση Μεταθετικών Δακτυλίων

i) Θέτει \( x + x \) στην \( x^3 = x \)
ii)Θέτει \( x + y \) και \( x - y \) στην \( x^3 = x \) και αφαιρά τα αποτελέσματα.
iii) Θέτει \( x + x^2 \) στην \( x^3 = x \)

Παρά το άγονο της περιδιάβασης μου αυτής εξακολουθώ να πιστεύω ότι η ιδέα του Λάιπντς για της πηγής της επινόησης είναι πολύ σημαντική και θα πρέπει να γίνει αντικείμενο συστηματικής έρευνας.

Τελειώνοντας αυτό το κείμενο μου γεννήθηκαν οι εξής σκέψεις τις οποίες μοιράζομε μαζί σας για προβληματισμό:

• Το να θέτει ο Λάιπντς το θέμα των πηγών της επινόησης δεν νομιμοποιεί αυτόματα και τις πηγές των πηγών της επινόησης κ.ο.κ. μέχρι το άπειρο; Έτσι εμφανίζεται ξαφνικά μπροστά μας από το πουθενά πιο απειλητικό παρά ποτέ το άπειρο.

• Αν οι πηγές της επινόησης μπορεί να γίνουν αντικείμενο επιστημονικής έρευνας και μελέτης και αν ο άνθρωπος είναι σε θέση να γνωρίσει και να καταλάβει σε βάθος την περιοχή αυτή και τους νόμους που την διέπουν τότε όντας οπλισμένος με τα μυστικά αυτά τι θα τον εμπόδιζε να παράξει τους μηχανισμούς εκείνους που θα του επέτρεπαν να δημιουργήσει εκείνες τις συνθήκες που θα παρήγαγαν τις οποιεσδήποτε μεγαλοφυείς ιδέες, σκέψεις, επινοήσεις, ανακαλύψεις, θεωρήματα κλπ. Αν μάλιστα όλα αυτά θα ήταν δυνατό να τυποποιηθούν θα μπορούσε να δημιουργήσει την υπό μηχανή - κομπιούτερ που θα παρήγαγε αυθεντική σκέψη και όλες τις μεγαλοφυείς λύσεις.

Αυτό φέρνει σίγουρα στο νου την άποψη του Νίτσε ότι δεν μπορεί ο άνθρωπος να δώσει πλήρης και σε βάθος απαντήσεις σε ερωτήσεις όπως τι είναι η σκέψη ή στο πώς λειτουργεί το ανθρώπινο μυαλό. Επίσης θυμίζει το περίφημο πρόβλημα του Hilbert, the Entscheidungsproblem, δηλαδή το decision problem, στο οποίο έδωσε αρνητική απάντηση ο Turing ο οποίος παρεμπιπτόταν πίστευε, νομίζω, στην δυνατότητα τεχνικής νοημοσύνης.
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Creating Of Water Fountain In Autodesk Maya

CREATING OF WATER FOUNTAIN IN AUTODESK MAYA

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Abstract

Computer graphics applications require complex 3 dimensional models to maintain a convincing level of realism. Large quantities of complex 3 dimensional models having large set of polygons are available. More number of polygons are required to get efficient realism in the model. This research paper presents an example of computer graphics application: an animation movie [0]. It has been done using Autodesk Maya software, Real Flow, Adobe After Effects. This program uses very high detailed models. These models are complex and took much time to render in Autodesk Maya.

1. Introduction

Computer Graphics will continue to become intertwined with our daily lives.

The development of computer graphics has made computers easier to interact with, and better for understanding and interpreting many types of data. Developments in computer graphics have had a profound impact on many types of media and have revolutionized animation, movies and the video game industry.[0]

The quality of the creation of the fountain should be relevant. Physical properties of water should be obtained. Three programs must be used in this program: Maya, RealFlow, After Effects.

1.2 Problem domain

3d model of fountain cups in Maya was built in this program. Cups of right form, gutter, holes of definite depth were created. Cups were built according to right distribution (organization) in order the water not to flow out of them (cups). The lower cup should be the biggest one as it contains all the water. Back wall of the highest cup should be higher, because the water should not splash.

Different forms and sizes of the fountain have been studied as it is important to make the water flow the correct way in this model (project). It is rather difficult to
make the right choice from the first glance.

The idea of this project is shown in figure 1.

The structure of the fountain is appropriate: the lower cup is big and simple. Real wave was used in RealFlow to simulate water in lower cup.

![Figure 1 Design](image)

In figure 2 Realwave plane was used for water surface of lower cup in Realflow.

![Figure 2 Realwave plane](image)
2. Previous work.

2.1 Creation a realistic lava flow.

First realflow meshes are textured and rendered in Autodesk Maya. The riverbed must be modeled. Realflow was opened and new scene was created. The riverbed had to be imported. After selecting different commands lava is simulated and flowed through a dry riverbed.

The simulation was run using different settings until particles feel “right.”

2.2 Make a splash.

When high-speed macro photography is needed RealFlow gives best results.
High particle counts can generate the finale detail that tricks the eye into believing that what it is seeing is real. [0]

![Figure 5 Particle count](image)

Then the mesh generated by adjusting some of the settings under the Mesh node in Node Params need to be refined.

![Figure 6 The mesh](image)
To get finer detail, you will have to be prepared to face long simulation times, so the more processing power you can muster, the better.
3. Methodology
3.1 Maya.

3.1.1 Using Primitives
Primitives are the simplest objects that you can generate in Maya (or indeed in any 3D application). Primitives are simple geometric shapes—which can be polygons, subdivisions, or NURBS—and are typically used to sculpt out models with our solar system model (project).[0]

3.1.2 Creating of fountain bath (cup).
To create a bath in Maya a cube from polygons as a base was taken.

![Figure 9 bath](image)

3.1.3 Creating of boards.
Cube from polygons was chosen as a base of board. 29 boards were used in this design.
3.1.4 Creating of walls and floor.

We used object Plane for creating of walls and floor. We changed sizes of the object Plane so its borders would not be in the camera lens.

3.1.5 Creating of other Fountain elements.

For creating of other fountain elements we used such objects as cube and created two columns around the fountain. We also created the carrier wall for boards (the
wall they are fixed to). Then we created the hole for flowing of the water out. Creating the hole for flowing the water out we used same methods as for creating the bath.

3.1.6 Environment (floor and walls) creation.
To make the fountain look more real we created the floor and back wall.

3.1.7 Texture applying.
To make the scene look real and natural it was important to apply texture for all objects.

3.1.8 Studying the basics of texture appliance and materials (shaders). (Maya shading and texturing)
Shading is the term in the Maya software for applying colors and textures, known as shaders. After you model your objects, Maya assigns a default shader to them with a neutral gray color. This is to allow them to render and display properly. Without any shader attached to a surface, an object cannot be seen.
Simply put, a shader defines an object’s look: its color, tactile texture, transparency, luminescence, glow, and so forth.[0]

3.1.9 Selecting textures. Searching of images containing tree texture, stone (marble) texture and so on.
Using search engine www.google.com we found images with necessary texture.

3.1.10 Applying of textures and materials.
First of all we applied downloaded texture files for main elements of the fountain. We created material that matches ceramics for the lower bowl of the fountain, also material that matches transparent water.
Color, transparency were changed to obtain blue transparent color. Reflectivity and Specular Color were changed to create natural shining of water.
3.1.11 Lightening creation.

Lightening was a very important element of the scene modeling. As good photographers use lightening, depth, direction and softness of shadows.

3.1.12 Creation of outer (surrounding) lightening.

As we wanted to show that our fountain was located in the street the basic source of light was Directional Light that imitated or matched the sun light. We did not change anything in settings of the light emitter only set to processing shadows for obtaining right shadows.

3.2 RealFlow.

3.2.1 Exporting of obtained scene into RealFlow.

Using instrument Combine we combined all elements of the scene in one big object. Using another instrument Triangulate we converted all polygons into triangles. We did it to use this scene in RealFlow then. Exported this scene using obj format. Then closed Maya without saving this scene because for our further work in Maya we needed the initial version of the scene.
3.2.2 Water particle calculation and creating of water surface in Real Flow.

Developing this program we had to study the basics of Real Flow, particles in Real Flow, surfaces (mesh) in Real Flow, creating and calculation of water particles, calculating of surface of water, export of obtained surfaces into Maya.

RealFlow is a fluid and dynamics simulator for the 3D industry. This application can be used to simulate fluids, water surfaces, fluid-solid interactions, rigid bodies, soft bodies and meshes. [0]

The technology uses particle based simulations.

![Particle calculation in RealFlow](image)

**Figure 13 Particle calculation in RealFlow**
Creating Of Water Fountain In Autodesk Maya

Figure 14 Water surface calculation

After calculating of water particles I had to build the surface of water creating such properties of water as malleability. The whole calculation including water particles from the surface would take two-three weeks using my computer.

3.3.1 Movie rendering in Maya.

At this stage video including the fountain was created.

Rendering was the last step in creating your CG work. It was the process by which the computer calculated the surface properties, lighting and shadows, and movement and shape of objects and saved a sequence of images. Although the computer did all the thinking at that point, we still needed to set up cameras and the render to get exactly what we needed.

3.3.2 Movie rendering (calculation) in Maya.

To create a film we had to perform settings of render engine. Rendering took some time. It depended on the power of computer. In my case it took 53 hours for processing of 600 frames.

3.3.3 Creating of video in After Effects Program.

We imported our rendered frames as jpeg sequence in after effects. On the basis of the obtained object we created timeline. Then we pressed CTRL+M and exported
3.3 Adobe After Effects

3.3.1 Basics
Adobe After Effects is primarily used for creating motion graphics and visual effects. After Effects allows users to animate, alter, and composite media in 2D and 3D space with various built-in tools and third party plug-ins, as well as individual attention to variables like parallax and user-adjustable angle of observation.

After Effects integrates with other Adobe software titles such as Illustrator, Photoshop, Premiere Pro, Encore, Flash, and third-party 3D programs like Cinema 4D.

3.3.2 Importing files
We began by importing all of our elements Fantan-Cam1_1.jpg and Fantan-Cam2_1.jpg.

Fantan-Cam1_1.jpg was the first frame of the first scene (other 600 frames were inserted automatically as the whole video). Fantan-Cam2_1.jpg was the first frame of the second scene (other 600 frames were inserted automatically as the whole video).

3.3.3 Composition of image sequence
Two Render Passes were composed together: Fantan-Cam1_1.jpg and Fantan-Cam2_1.jpg sequences were taken and combined in one big scene and located one by one.

3.3.4 Export of final movie
Feature film creatures use similar technologies when it is important to combine real world with the virtual one. Then it is difficult to find the difference. These methods are used if people do not have enough money to create space ship as an example.

4. Conclusion
The task to create a water fountain in Maya was not an easy one. The difficulty was in finding methods to combine three programs: Autodesk Maya, RealFlow and adobe after effects. To find correct settings in RealFlow for water properties was very difficult. Also calculation of water particles and surface took a lot of time. At the end the quality of creation of a model is relevant. Physical properties of water are obtained. The quality of rendering in Maya is very good. The video is amazing.
5. References


AN INVESTIGATION OF HOW DISTRIBUTED LEADERSHIP LEADS TO SCHOOL EFFECTIVENESS IN AN URBAN PRIMARY SCHOOL IN CYPRUS.

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ABSTRACT
'The continual deepening of knowledge and skills is an integral part of the development of any professional working in any profession. Teaching is no exception' (Boyle et al, 2005). This project aims to examine the extent to which distributed leadership promotes personal and professional development and how this can lead to school effectiveness. A qualitative research was conducted, which focused on observations, semi-structured interviews and a documentary analysis that were used for data collection and analysis. The concepts of validity, reliability and generalizability were taken into consideration while designing and conducting the research as well as ethical issues that should underpin every research.

Key words: distributed leadership, professional development, school effectiveness, qualitative research, validity, reliability

RESEARCH CONTEXT
The research took place in a primary school in Limassol, Cyprus. This school is consisted of 120 students, 9 teachers and a headteacher whose style of leadership can be characterised as distributed. The school's culture is based on collegiality, collaboration and shared decision-making. Before proceeding with my research, I gained my colleagues'-participants'-consent and explained to them what is included in the research. As a member of this organization, I had easy access to the data and I observed the research closely. The aim was to obtain honest answers from the staff so that the research can be characterised as objective. Nevertheless, this is partly difficult to be achieved in small scale research where the participants are familiar with the researcher and may wish to please his/her expectations.
RATIONALE
Little research has been conducted in Cyprus, concerning the influence that distributed leadership can have on school’s effectiveness and particularly in teachers’ professional development. This research, focuses on how distributed leadership is applied in this school, how the headteacher can inspire staff to work together, how all staff can be included in a culture of trust and collaboration; a learning community in which one learns from and with others. The common aim is an ongoing personal and professional development that can work positively on students’ performance. This research was intended to increase my leadership practices and capacities, and contribute to my personal and professional development as well as that of my colleagues.

LEADERSHIP AND MANAGEMENT ISSUES
An important framework for my project is that of distributed leadership, i.e. the ‘spreading or stretching responsibility widely across the members of an organisation (Spillane et al., 2001 cited in Study Guide, p.23). Crawford (2004) claims that wise leaders recognize that they need to build teams to undertake leadership tasks, i.e. distribute leadership. Likewise, in the collegial model, no one is in total control but everybody has his/her own responsibilities (Bryant, 2004). This kind of participation in shared decision-making makes all members feel valuable, achieving their commitment and successful outcome (Hellawell and Hancock, 2004). Through the application of distributed leadership in an organisation, a leader succeeds in increasing capacity-building, i.e. ‘a process of transforming an organisation into a learning community that aims to include all the members’ (Open University Study Guide, p.28). Beattie (200) argues that all members of the learning community should participate in the creation and re-creation of the school culture and that effectiveness in an organization results from a collaborative culture in which all members have active participation and shared governance, are ‘treated as worthwhile and valued persons’ (p. 171).

Moreover, the leadership concept is based on values and good school leaders are those who are able to maximize the leadership qualities of others, enabling them to take on leadership within their areas of expertise; they lead by managing, motivating and inspiring people (Riley and MacBeath, 2004). There is a need for a pervasive ‘lifeworld’ i.e. culture, meaning and significance (Sergiovanni, 2004). Likewise, Bryant (2004) argues that leaders are responsible for the learning and development of the staff. Principals must ‘walk the talk’ (DiPaola, 2004), by guiding the way for others to follow.
LITERATURE REVIEW
As Riley and MacBeath (2004) argue, there is no single recipe for all schools that can be applied in all contexts. There are only common ingredients and collaborative sharing of thinking and practice. Collegiality is considered an essential value of distributed leadership that promotes teachers’ professional development as ‘colleagues function for one another as a source of support, feedback and alternative ideas’ (Clement and Vandenberghe, 2001, p. 45). As Sergiovanni (2004) mentions, a culture with common vision and values directs people towards a common aim. Mulford and Silins (2003) agree that when members feel accepted and own a sense of belonging, they become more motivated and committed in the learning process.

The collegial model focuses on a distributed leadership approach in an organization, one which seeks to build truly collaborative cultures that encourage the exchange of ideas, endorse mutual problem-solving and provide opportunities and motivation for members to develop personally and professionally (Leithwood et al., 2004). There is an emphasis on collegiality and team working as ‘top teams rather than star individual are the key to effective organizations’ (Open University study guide, p.119). Moreover, there is an appreciation for heterogeneity and diversity, as they can stimulate innovation and enable improvement. Under the spirit of collaboration “each instrument in an orchestra, both individually and in concert with others, makes its distinctive contribution to the whole” (Eisner, 1991 cited in Mulford, 2004 p. 10). Distributed leadership is related with the transformational leadership model. Transformational leaders seek to develop professional learning communities which ‘can initiate and cope with change’ (Horner, 2004, p.32). Falk (2003) argues that transformational leadership promotes positive change for constant improvement and successful outcomes, a learning community in which staff realizes that change is possible and desirable and starts to adopt strategies for the implementation of it. Similarly, Fullan (2004) argues that innovators need to be open to the realities of others aiming towards change, as a base for improvement. Falk (2003) argues that there can be personal and professional development of staff within an environment of collaboration and consensus. Moreover, it is important for staff to take roles and responsibilities and have their own share in accountability. Through constant personal reflection on action, members ‘continuously imagine and create new scripts for their own lives and for the setting and communities in which they live’ (Beattie p. 182). Similarly, Gold (2003) argues that reflective conversations, networking role models and mentors set up an ethos or culture where school leaders are prepared to take risks and to create a safe environment for others to do so. Hargreaves (2004) mentions that if all or most staff agrees on a future direction when they diagnose the present culture, there is motivation to work out positive strategies to
close the gap. Mulford and Silins (2003) argue that effective leadership includes the nurturing of leadership opportunities for teachers and pupils, a leadership that formats a network of values–driven relationships. Falk (2003) recognizes that ‘the building of networks relies for its success on building trust between the network members, a clear leadership role’ (p.274).

**MY ROLE**

Since this research took place in my own professional context, I was acting as a practitioner researcher. I had easy access to data and there was an improvement of my professional knowledge and practice. As Hopkins (1985), argued ‘by taking a research stance, the teacher is engaged not only in a meaningful professional development activity but also engaged in a process of refining, and becoming more autonomous in, professional judgment’ (cited in Research Methods in Education, p. 136). Due to close relationships I have with my colleagues it was easy to gain their approval to participate in the research. They were acting as ‘key informants providing vast amounts of information’ (Research Methods in Education, p.61). Nevertheless, my colleagues might not have revealed their true perceptions due to fear of being stigmatized, even though I had tried to persuade them that I will preserve the anonymity of the respondents and that all information will be treated with strict confidence.

Furthermore, I was having frequent interaction with the staff, and offered constant motivation to all members by illustrating the importance of the research and the positive contribution it can make. Through my learning diary, I exercised the notion of ‘reflective practitioner’ introduced by Kolb (1984) and Schön (1987) (cited in E849 Study Guide, p.8), stressing the importance of reflection in professional development. I advised my colleagues to reflect on their practices and learn from their everyday experience in order to become more competent in future action, to identify occurring problems and find the best solutions in cooperation with their colleagues.

**ETHICAL ISSUES**

Professional development for Falk (2003) is the growing within an environment of increasing complexity and change. It is about people wanting to accept responsibility and accountability always according to the ethical dimensions as the concept of ethics in the execution of effective leadership is crucial (p.281). One has the right to report the work of others ‘provided that those involved are satisfied with the fairness and accuracy of accounts’ and that these are subject to confidentiality; not feel in any way exposed or embarrassed (Research Methods in Education p.139).
Concerning this research I took into consideration several ethical guidelines published by BERA (2004)

- Informed consent: I gained my colleagues’ consent for participating after I had explained to them the purpose and process of the research.
- Permission for observations, questionnaires and interviews.
- Permission for using comments from interviews or meetings where needed.
- Confidentiality, privacy and anonymity of the data were secured.

METHODOLOGY-DATA COLLECTION

This is a case study as it involves the investigation of a relatively small number of naturally occurring cases, rather than researcher-created cases (Research Methods in Education, p.115). As Cohen et al (2000) argued, ‘case study provides a unique example of real people in real situations, enabling readers to understand ideas more clearly than simply by presenting them with abstract theories or principles’ (p.181).

There was a use of a qualitative method for collecting data as the research was focused on ‘exploring attitudes, behavior and experiences and getting an in-depth opinion from participants’ (Open University Study Guide, p.62). For this research there was a use of semi-structured interviews, observations, questionnaires with open-ended questions, a learning diary and a critical friend.

Since this is a small school, results from this research cannot provide wide generalization, even though findings can prove useful for other leaders in similar contexts. Moreover, since participants are aware of the fact they are being observed, they might have altered their behavior- this known as the Hawthorne effect, a term introduced in 1950 by Henry A. Landsberger. Hence, the validity of the findings can be questioned. In addition, it often occurs that interviewees might try to please the interviewers and not express their honest opinions. However, interviews taken from staff were combined with observations of staff meetings and activities. The major means of validating accounts and observations is through triangulation, i.e. the use of several methods to explore an issue (Research Methods in Education, p.65). The sample of colleagues’ interviews was carefully selected, according to age, gender and sex. I interviewed four teachers and the headteacher.

In addition, I used field notes for the gathering of findings from formal and informal discussions and observations, in a learning diary for later reflection. This may have caused bias to the research i.e. misinterpretation of facts according to one’s beliefs and opinions. When personal judgment is involved this tends to lessen the reliability of the category system (Research Methods in Education, p.143), thus, I asked a critical friend to help me through the research, preserving this way the objectivity of
the results and enabling the process of self evaluation. As Preedy et.al (2004) argued self-evaluation is necessary for the improvement of learning and teaching. Moreover, in cooperation with other researchers, I intend to proceed in further research in the near future in order to test my findings. This way reliability can be increased, if nearly identical results are reached.

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An Investigation Of How Distributed Leadership Leads To School Effectiveness In An Urban Primary School In Cyprus


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The review presented in this paper aims to add to the knowledge regarding the contribution of facial expression to perceptual processes and organizational reality. The paper begins with essential information on nonverbal communication. Moreover, the concepts of static, dynamic facial expression, thin slices and micro-expressions are being introduced. Furthermore, facial expression is discussed in relation with the areas of deception and emotion. Finally, the main literature findings and implications for the area of business are discussed.

Keywords: facial expressions, perception, static-dynamic deception, emotion.

1. INTRODUCTION

The dynamics of nonverbal communication and more specific -for the existing study- facial expression can be experienced clearly in internet chatting rooms like facebook and MSN. Many sentences, there, can be replaced with simulated emotions (such as “☺” or “;/”) which are actually different combination of simple virtual facial expressions. The opposite stands as well; when these “emotions” are not there, confusion and misunderstandings increase. Simple “wing” a lift of an eye brow, a laugh or a smile can differentiate the meaning of a sentence.

The current paper aims to examine the nonverbal aspect of the human organ called the face. More specific, some of the questions that the study attempts to answer are: What is nonverbal communication and what information the face can give as a part of that system? What is the relation of the face with emotion?
How is it related with specific real world phenomena like deception and emotional contagion? What are the implications of gaining such an understanding for the business context?

The literature search has been navigated mostly towards psychological literature on nonverbal communication, perception and emotion with some articles from communication in business (management and service encounters), and education. The vast majority of books and articles used in the review are from 1989-2007.

The main concepts and ideas are discussed as they came up through relative literature. The review begins with basic information on nonverbal communication and its relevance with business. Furthermore there is a focus on the area of the face with the concepts of static, dynamic facial expression, thin slices and micro-expressions being introduced. After that, facial expression is examined under the light of research areas like deception and emotion. Finally, the main literature findings are discussed, and an attempt takes place of applying them to form implications for the area of business.

2. WHAT IS NONVERBAL COMMUNICATION?

Before beginning review of the literature, an early concept clarification will be stated in order to avoid misinterpretations. In the current study the terms nonverbal communication (N.V.C.), nonverbal behaviours (N.V.B.s) and body language will be referring to the same concept and the general definition is:

All of the messages other than words that people use in interaction (Hecht & De Vito, 1990).

But how can people exchange ideas without words? Many scholars got deeper than the previous definition. More specific body language is described as the sum of separate elements as kinesics (communication by body movement as gestures, posture, facial expressions and eye behaviour), proxemics (use and perception of social and personal space), haptics (bodily contact – touching behaviours), vocalics (voice qualities and vocalizations) and oculiesics (messages sent by the eyes) (Banercoft, 1995, Boyd, 2000, Dunbar & Burgoon, 2005, Hartley, 1999, Kello, 2007, Lörscher, 2002, Overmier, 1995, Wragg, 1994).

3. IMPORTANCE OF N.V.C. IN GENERAL

N.V.C. is an important part of peoples’ life. Some studies support the idea that 93% of a message is sent non-verbally, and only 7% through what is said. More analytically, 55% of a message is sent through facial expressions and
38% through vocal intonation (Kristen Amundson, 1993, Mehrabian and Wiener, 1967, Miller, 1984).

In every interaction people evaluate the context and react according to it. The nonverbal aspect, as pointed out earlier, provides a large amount of the information which are used to that assessment. Furthermore, N.V.C. is responsible for processes like impression formation and management, judgment, providing information, assessment of intentions of others, social influence, regulating interaction, emotional expression and interpretation, helping goal achievement, even deception (Aguinis et al, 1998, Bancroft, 1995, Boone & Cunningham, 1998, Canfield, 2002, Cummings, 2000, Klinzing & Gerada-Aloisio, 2004, Patterson, 1990, Valle, 2006, Wood, 2006).

4. IMPORTANCE IN BUSINESS: NON VERBAL COMMUNICATION AS A DYNAMIC TOOL

As mentioned earlier, N.V.C. can be used for assessment of intention and interpretation of feelings (Bancroft, 1995) which is really useful in the area of business (Papadaki-Michailidi, 1998). As the previous scholar continues, diagnosing customers’ or co-workers’ needs is essential to structuring and maintaining healthy personal and organizational relations. Apart from N.V.C. “reading” body language is proved an indicator for perception building, impressions, ability, confidence, likeability and of course social authority and control (Klinzing & Gerada-Aloisio, 2004, Rejeski & Lowe, 1980). Especially for the latter, N.V.C. for powerful individuals (leaders for example) was found to be different, more dominant and noticeable (Friedman et al, 1988).

Rationally, body language can be considered as a tool to build image to others. A number of scholars indicate that nonverbal communication is a critical aspect of the impression management process (Burgoon et al, 1990, Carney et al, 2007, Fukayama et al, 2002, Gardner & Martinko, 1988, Greenlees et al, 2005, Hiemstra, 1999, Hubbard, 1994, Kacmar et al, 1992, Riggio & Friedman, 1986, Simons, 1995, Zebrowitz et al, 2002). Furthermore, N.V.C. is found to be positively correlated with consumers’ evaluation of the services encounters (Mattila & Enz, 2002, Peterson, 2005). Therefore, returning to the previous reasoning and expanding it, body language can be considered as a tool to manage personal and organizational image to others.

5. N.V.C. CHANNELS

The channels, are basically separate functions which the body uses to reveal intentions, thus to communicate.
The total body language communication (or context of the whole)…is delivered from the messages emanating from each of the channels within the context of the environmental inputs. (Jenkins & Johnson, 1977, p. 35)

Day et al (1990) divide those elements in visual (facial expression, eye contact, proximity, posture, gestures) and non visual (Touch and Voice). As pointed out before, the current study focuses on the area of the face.

5.1. Facial expression

A great number of studies were conducted about facial expression and the reason is that it is a unique source of interpersonal information. Facial expressions can reveal emotion, social intent, motivation and perceptions (Aguinis et al, 1998, Cohn et al, 2002, Irmsher, 1996, Krumhuber et al, 2006, Schmidt & Cohn, 2001). Extending from the latter, facial expression can be used as a tool to express these feelings. Surakka & Hietanen (1998) support that the face can be used deliberately for expression but also can reveal emotions involuntary (see below in section about smile “Duchene-smile” and section on deception).

It seems that the area of the face and its expression is a complex phenomenon. Tassinary and Cacioppo (1992) describe the human face as a “coherent” and “open” unit:

By coherent, we mean that the facial musculature is a self-contained system of muscles that is both anatomically and functionally distinct from the other muscle systems of the body. By open, we mean simply that the facial musculature is influenced by inputs and generates outputs that influence other systems. (p. 30)

The quotation above implies that the face area is a complete communicational tool independent from other body channels which is adequate to sent and receive information that have communicational impact.

Some of the scientists, that devoted a great amount of time studying facial expressions (such as Duchenne G.B.A. and Ekman, P.), in their attempt to gain a deeper understanding about the underlying structures and mechanisms of facial expressions ended up studying the face muscles and how they are connected with the human brain. More specific, Duchenne (1859/1990) combined anatomy with nerve electric stimulation to create artificial emotions.
Basically, he constructed the emotions by trying possible facial muscle combinations by putting electric needles into volunteer subjects. Work like the one Duchenne began, was the ignition for others to investigate the area and discovered that face muscles and emotion seemed to be directly connected (Argyle, 1991, Rollman & Roach, 2000). In that way, science was given a chance to try “translating” facial expressions into the respective emotions. Through facial expression research development, the combination of facial anatomy and expression reached research instruments as Facial Action Coding System (F.A.C.S., Ekman and Friesen, 1976, 1978).

The F.A.C.S. is an anatomically based, comprehensive, objective technique for measuring all observable facial movement. It distinguishes 44 action units (AUs). These are the minimal units that are anatomically separate and visually distinguishable. Facial coding usually requires slowed-motion inspection of recorded behaviour (Ekman & Rosenberg, 1997, p. 118).

Instruments like F.A.C.S. are today considered to have high levels of validity and are used in studies that require facial expression decoding (see Harker & Keltne, 2001). A part of F.A.C.S. is called EM.-F.A.C.S. and it focuses on the facial expressions and the emotions which might exist behind them.

Getting deeper on facial expressions, a considerable amount of facial behaviour research has worked on smiling. Hall (1985) noted that smiling not only shows enjoyment but may reflect nervousness, or maybe is an effort to satisfy or calm down others, or indicate inferiority. As mentioned earlier, Duchenne (1859/1990) tried to investigate facial structures with nerve electric stimulation. One great result that he reached was a function of human smile. He discovered that the “felt” smile of enjoyment (or a “Duchenne” smile) is distinguished from voluntary produced smiles by considering the activation of two facial muscles: zygomaticus major cheek muscle region, “which pulls the lip corners up obliquely”, and orbicularis oculi periocular, “which orbits the eye, pulling the skin from the cheeks and forehead toward the eyeball” (Ekman, 1992, p.36, Surakka & Hietanen, 1998, p. 25). The results of the “Duchenne” smile gave the ability for further research to exploring matters on authenticity of a smile and how does it relates with the receivers judgments. Especially for the business context, Grandey et al (2005), highlights authenticity as a key element in customer service success. Felt emotions like “Duchenne” smile...
seemed to evoke similar feelings to the customers by leaving a sense of general pleasure which transferred to the encounter.

Except smile, other organs, located in the face region, received a lot of attention by nonverbal research; the eyes. Eye behaviour (or oculistics) is many times analyzed separately from the rest of the face due to its importance (Rosenthal et al., 2005).

People look longer and more frequently at those whom they care about and trust than they do those whom they doubt or dislike (Miller, 1981, p. 102).

Eye contact (or gaze) can establish strong emotional bonds or destroy them. Oculistics are vital for impression managers because of the positive outcomes they can get. By using eye contact people can express emotions, confidence, interest, respect, observe, get feedback by reactions, control how the conversation flows, and communicate affection and involvement to others (Bancroft, 1995, Hartley, 1999, Irmsher, 1996, Moorhead & Ricky, 1995). At the same time, eye contact avoidance can mean the opposite; reduction of perceptions of confidence and attention, loss of credibility and a big amount of visual nonverbal information which could serve as communicational feedback.

Expanding from basic knowledge, concepts like “thin slices”, “static N.V.C.”, and “Micro-expressions” appear during literature searches.

6. THIN SLICES

Apart from continuous, facial expression in N.V.C. literature there is also the term thin slices which by definition refers to small part (a thin slice of communication, such as a few seconds a videotaped interaction) of the N.V.C. Ambady & Rosenthal (2002) support that the judgments made from thin slices of behaviour are actually very accurate. The justification is given in a bipolar:

…similarly Zajonc (1980, 1984)… a primitive neurological system that allows for quick analyses and rapid action in case of threats to the organism. The initial affective reactions are based on qualities that automatically draw attention and can be evaluated at a preconscious level for favorability-unfavorability.

Too much thinking and reasoning can sometimes be disruptive of judgmental accuracy. People make better affective judgments and decisions when they introspect less and do not seek reasons to explain their feelings (Wilson, Dunn, Kraft, & Lisle, 1989; Wilson & Schooley, 1991). It seems likely that the thinness of the slice eliminates distracting stimuli and enables judges to focus on expressive behaviour.
Furthermore, judgments that are based on thin slices of behaviour may be accurate because they activate stereotypes that are accurate because the social world operates to reinforce and maintain certain patterns of behaviour in people (Ambady & Rosenthal, 2002, p. 267-268).

In other words, according with the quotation, there is a biological automatic evaluation taking place when seeing others which has to do with survivor. The first impression is accurate also because of the decrease of distraction like for example verbal communication (in combination with self presentational aims) which might alter impressions.

7. **STATIC FACIAL EXPRESSION**

The “thinnest” of thin slices is static facial expression with pictures being the main stimuli because of the visual information they give with zero acquaintance, a “condition that causes judgments to be made only from physical appearance” (Hubbard, 1994, p. 16). Very short exposures to static images are enough to create an impression.

…as minimal an exposure as 100 ms is sufficient for people to make a specific trait inference from a stranger’s face. (Willis and Todorov, 2006, p. 596)

The area of the face, again, plays a vital part in the judgment procedure with the structure of the face constructing global but also specific trait impressions like extraversion, dominance, consciousness, sexual availability, agreeableness, and honesty (Hassin & Trope, 2000, Zebrowitz, 1997).

Several scholars have tried to connect character traits or judgments with face characteristics. Zebrowitz (1997) discusses features like size, location, and shape of face characteristics and how do they relate with personality traits. For example people with big eyes and fleshy lips the so called baby-face type are considered to have traits that are baby based like innocence, submissiveness and so on. One basic underlying principle is transference of traits from a significant other to the person that has the specific characteristics.

Strangers may be perceived to have the same traits as the significant others or archetypes whom they may resemble… the woman who resembles Marilyn Monroe will find it hard to convince people of her intellect (Zebrowitz ,1997, p. 57).
So if it is a baby-face that was mentioned above, the trait transference will be from the baby schema; or it might be anything else from common stereotypes to specific memories.

Another interesting hypothesis says that the facial expressions people use during their lives (the repertory of most used expressions, thus the way they feel or pretend to feel) shape permanent marks on facial structure. This would have as a result a face to be the illustration of the emotions the person is experiencing more often (Hubbard, 1994).

8. MICRO-EXPRESSIONS

As pointed out earlier, facial expressions are directly linked with the brain, so when an emotion is experienced, the equivalent facial expression appears (Beall, 2004). But if the face always reveal emotions, then real life phenomena like deception would probably not be possible. Micromomentary expressions explain the latter:

Haggard and Isaacs suggest that people produce facial expressions that last only a fraction of a second. A person can be showing a pleasurable countenance, change to a scowl, and then back to pleasure in such a brief time that normal human observation will not detect it. These expressions are known as “micromomentary” expressions or “micros”. Although not intended as communication, micros do express a person’s true feelings. Micros act as an outlet for expression of otherwise unacceptable emotion... Even if not consciously aware of the micro expression, the people sensitive analyst can develop a subconscious impression of the user’s attitude (Jenkins & Johnson, 1977, p. 39).

So, when an emotion is experienced, it is painted on the face for a fraction of a second or more, but sometimes it is very difficult to detect it consciously. At the same time, “micros” can act in an unconscious manner by adding into the general impression at an underlying perceptual level. The authors imply that it is possible that the abstract concept of “intuition” or “chemistry” that is created without any obvious reason about another person is a result of “micro” subliminal reading.

The next section, “Deception” is not irrelevant with the latter. Micromomentary expressions have many times been taken a vital role in deception studies (Ekman, 2003).

9. DECEPTION

Deception is defined underneath from Akehurst (1997):
…an act that is intended to convince another person to believe in something that the deceiver considers false. It follows that an act may qualify as deception only when it is intentional, conscious and directed at another person (p. 2)

9.1. Facial expression and deception

The human face can be used for deception but it is very difficult to be controlled effectively 100%.

The facial nerve is activated partly by lower brain areas, for spontaneous emotions, and partly by the motor cortex, for deliberate expression and reflecting the effects of socialization. The first of these routes is not under conscious control, though the second is, and the actual expression shown is a synthesis of the two inputs, often containing “leakage” of true feelings (Argyle, 1991, p. 167).

The same stands for the eyes as well. There are neural links to the brain which cause the eyes to respond in harmony to brain action (Rollman & Roach, 2000). It is true that the muscles that control facial expression and eye behaviour are beyond conscious control and some of the times can be sensed by observers (Ekman, 1997, Browdyke, 2002), but deception detection is much more complicated phenomenon than “face reading”.

9.2. Demystifying “face always betrays a lie”: a whole N.V.C. system that underlies of deception

Stereotypical deceptive facial behaviour like gaze aversion and smiling might be an indicator of deception (Vrij et al, 2001). Most people mistakenly think that deception will be easily traced through observing facial expressions (Akehurst, 1997) but research proved otherwise regarding the leakage hierarchy: the face is most easily controlled, followed by body cues, and tone of voice is the least controllable channels (Akehurst, 1997, Ambady & Rosenthal, 1998, Snodgrass and Rosenthal, 1985). Relatively, research has shown that judgments of deception made observers were more accurate when observing the body than the face (Ekman, 2003). A possible explanation is given from Ekman and Friesen (1969), which suggested that the most controllable are the ones people receive feedback more often, so they reinforce their efforts of being more convincing.

As Akehurst (1997) continues, one of the main feelings that deceivers are experiencing is arousal because of guilt and anxiety of getting caught. That can result to negative body language such as less pleasant facial expressions, body
tension, or increase of self and body adaptors (movements that are not necessary, that release tension like scratching the face or playing with pen). Moreover, “...high levels of arousal are visualized by speech errors, halting speech, and particularly voice tremor, that is, vocal tension” (Mehrabian, 1971, p. 47). Also, deception differs from unplanned behaviour, it seems too fixed and lacking impulsiveness, plus it is sometimes exaggerated.

Generally, people try to control their expressions to transmit a desirable message but their bodies “leak” information with some channels betraying the truth more than others (Zuckerman et al, 1981). Ambady & Rosenthal (1998) define leakage as the “nonverbal behaviour displayed without intention or awareness, revealing true feelings or affective states” (p. 775). Arousal, as said earlier, might highlight the “leaky” behaviours in less controllable N.V. channels.

...deception was related to a higher frequency of less controllable adaptors. It was also suggested that arousal may increase pupil dilation, frequency of blinking, voice pitch level, frequency of speech errors and speech hesitations (Akehurst, 1997, p. 38).

Another structural foundation of deceptive behaviour is decrease of non functional movements (hand and finger movements and foot and leg movements, Vrij, 1995) because the deceivers think that they are suspicious. The result in body language perception for a judge is sometimes a feeling of something going wrong. The justification is that during deception, there is a great cognitive load because of the need to thing and control the movements, in contrast with telling the truth which is spontaneous behaviour, resulting in a neglected nonverbal communication diminishing overall picture (Ekman & Friesen, 1972; Ekman, 1997).

The literature from the last few paragraphs might discourage the reader from observing the face for judging deception but that does not mean that it is impossible for the face to betray true intentions and feelings, as long as it is examined under the proper conditions.

10. DECEPTION AND “MICROS”

Concepts that were discussed in earlier parts of this section such as micro-momentary expressions, deception and nonverbal “leakage” all interrelate in a very interesting fashion.

...when deceivers try to squelch the facial expression of an emotion they are trying to conceal, the resulting expression—a micro affect
display—may be briefer than it is ordinarily, but the nature of the affect may still be identifiable (Ekman and Friesen, 1969).

Rationally, an expected hypothesis would be that the detection of micromomentary facial expressions would be a factor of detecting deception, or true feelings behind masked expressions. Frank & Ekman (1997) investigated the latter and have found a positive correlation between peoples' skill to read “micros” and detection of deception. Variables that decreased the difficulty level were how big the lie was. For high stakes lies, stronger emotions (of guilt, or fear for example) were evoked, so N.V. leakage was stronger and more distinct. In general, recent studies on deception and micromomentary expression support that detecting “micros” is a way to identify an emotion which is possibly active and can provide information for the true emotional state of someone (Frank & Ekman, 1997, Ekman, 2003). An ideal deception detection environment might be video clips with F.A.C.S. coders having the power to analyze by freezing the video, matching the static facial expressions with possible emotions and then connect with the context (for example verbal communication, actor characteristics, and stressful conditions) to conclude. So if a person who is interviewed for a job and answers general questions with a relaxed face, when he/she has a micro of fear on his/her face while he answers “I had to move on to a higher level” in a question “why did you left your previous job”, then it is only fair to assume that maybe he/she has something to hide and that the interviewer need to dig a bit more (perhaps contact previous employer) before making a decision. In conclusion, to conceal a feeling nonverbally (to deceive) is hard to achieve because N.V.C. seems to be a vehicle for emotion to externalize.

11. EMOTION & FACIAL EXPRESSION

Friedman (1984) supports that people are trying to translate other people’s N.V.C. into the respective emotions and intents in order to create social reality.

At the neurophysiological level, a fundamental emotion is defined as a particular, innately programmed pattern of electrochemical activity in the nervous system. The expressive component consists mainly of a characteristic pattern of facial activity, but may also include bodily responses (postural, gestural, visceral-grandural) and vocal expressions. (Izard and Buerchler, 1986, p 167)
In other words, when someone experiences an emotion, at the same time an analogous message is sent to the face muscles (it also include other body muscle reactions but the current study's emphasis is the face). That message may be visible for less than a second or it might need special equipment to be detected (electrical sensors) but it is there (Gladwell, 2002).

The way the emotion is displayed depends on variables like gender, culture, social group, status, formality of occasion (Kiroauc & Hess, 1999). For example if the sender and receiver know each other well, then the interpretation will take in consideration all the unique information and possibilities that characterize the sender’s personality. If they meet for the first time, the receiver will try to employ other kind of knowledge like stereotypical information (Kiroauc & Hess, 1999, p. 187).

11.1. Emotion from one person to another: inner structures

It seems that emotion is not just a neurophysiological reaction that is constrained into the person that is experienced. Research has proved with observing facial electromyographic (EMG) activity during perception that “facial expression elicits affective reactions in perceivers” (Niedenthal & Showers, 1991, 129). Going a step further, once an emotion is triggered in a receiver, a whole system of concepts and memories associated are also set off in that way that the emotional state will activate certain (biased) ways of interpreting information which are emotion congruent (Bower, 1991, Mehrabian, 1971). Moreover, Bower (1981) suggests a model that explains how these biasing procedures work:

The model assumes that mood states are represented in a memory system similar to other information units, and are linked to other knowledge structures by associative pathways formed in the course of prior experiences involving that mood. Whenever a mood is experienced, its representational node is activated, and this in turn will spread activation to other constructs associated with that mood, facilitating their retrieval and use in cognitive processing. The model implies that the experience of a mood state will (a) facilitate the learning of mood-congruent associative base; (b) selectively focus attention on mood congruent information; (c) selectively help the retrieval of mood-consistent information and (d) selectively facilitate mood-consistent associations and the interpretation of ambitious information in a mood-consistent manner (p. 269-270).

A rational trying to connect the structures of emotion experienced with facial expression and how does it transmits the emotion to receivers is one of
12. EMOTIONAL CONTAGION

As stated earlier, facial emotional expressions can trigger others’ emotional expressions and relative emotions (Sura kka & Hietanen, 1998). The procedure is named emotional contagion and has mainly to do with automatic and subconscious, emotional conversion through nonverbal imitation. More specific, emotional contagion is defined as the tendency to automatically mimic and synchronize body movements, facial expressions, posture, speech patterns, and vocalizations with those of another individual and, therefore, to converge emotionally (Hatfield 1992, Schoenewolf, 1990, Sy et al., 2005, Wild et al, 2001).

Getting deeper, as the quotation implies, there are two mechanisms that comprise emotional contagion: spontaneous mimicry and feedback (experience of emotion itself emerging from mimicry).

The individual who has imitated a smile may now feel happier either because of physiological changes, such as an increase in oxygen enhancing exuberance (Zajonc, 1985), or because of inferences about one’s enjoyment based on self-perception of the behaviors (Chartrand & Bargh, 1999; Neumann & Strack, 2000) (Barger & Grandley, 2006, 1230).

Research around the area of Emotional Contagion (E.C.) has discovered some special characteristics around the topic. The first one is that E.C. is much more complicated from linear transference of emotion. For happy and sad faces, an emotional contagion is more likely to result in a feeling of happiness and sadness respectively, but for angry faces, for example, an emotional consequence of fear and disgust was noticed (Hsee et al., 1990, Hess & Blairy, 2001, Sullins, 1991, Lundqvist . and Dimberg, 1995, Doherty, 1998). Wild et al (2001) in an attempt to investigate the previous observable fact conclude that:

…the momentary feelings evoked by looking at emotional faces are most likely a mixture of emotions: 1 specifically corresponding to the depicted emotion and induced via a process of ‘primitive emotional contagion’; evoked by the general situation e.g. experimental setup ; and 3 influenced by the subject’s individual inner ‘emotional status’ (p. 121)
In other words, emotional contagion by its self is difficult to exist since there is the context to consider and individuals’ special characteristics. However, a level of influence can be created by trying to control the first two factors: the conditions where the communication is taking place and the emotions via senders’ communication.

Except, the level of existence of E.C. in a communicational situation there is also the level of emotion accuracy of transmission. Barsade (2002) gives the example of extroversion as a personality characteristic which is correlated with optimistic and energetic emotions but also has high levels of accuracy of transmission accuracy to others. Here the scholar implies that the more distinct and clear is the emotion through the emotional displays (as long as the intensity “fits” contextually) the more contagious it is. The emotion must be triggered consciously or subconsciously - in each case a clear perception of the emotion sent increases the possibility of accurate transmission or else the emotion received will not be equivalent with emotion transmitted so emotional contagion exists but looses possibility of being 1:1 accurate - into the receiver in order to experience it.

12.1. A brief attempt on penetrating the structures of emotional contagion: unconscious communication

A deeper look in underlying procedures behind emotional contagion during the current literature review leaded to sources regarding areas like unconscious communication and implicit perception. Starting with, Niedenthal (1988, 1990) gave evidence that implicit perception of emotional perception is a fact. Relatively recent studies indicated that subliminally (down to 30 milliseconds) exposed facial expressions can elicit affective reactions which can have a conscious or unconscious impact on judgment and physiological responses like facial EMG, skin, dermal and cardiovascular reactions and changes in regional blood flow in the amygdala (Dimberg et al., 2000, Wild et al., 2001, Winkielman et al., 2005). The preceding results designate that facial expression of emotion can, without awareness, trigger corresponding feelings. Affective reactions may have impact on information processing, by providing a biasing filter, increasing the possibility of influencing social perception and judgment (Niedenthal & Showers, 1991)

13. DISCUSSION

The current study explored the social-psychological side rather than the anatomical of facial expression as nonverbal communication tool in a range of static, thin slice and dynamic manner and attempted to use inner structures to investigate real life phenomena as emotional contagion and deception.
Facial expression is just one of the nonverbal cues that comprise what is called body language. The silent behaviour emanating from the face can reveal emotion, social intent, motivation and perceptions (Aguinis et al., 1998; Cohn et al., 2002, Irmsher, 1996, Krumhuber et al., 2006, Schmidt & Cohn, 2001) and it can be considered as complete and independent nonverbal tool which is sufficient to transmit and accept information.

Emotion and facial expression are directly connected so a “paraphrase” of what someone feels is painted on the face in a way that through the years other people learned to understand and use it to communicate complex messages with. The different levels of facial communication give a different angle to the interpretation. For example visual information from pictures (static) leaves perception to use only physiognomy cues combined with pre-held stereotypes to form impression. Dynamic facial expression, on the other hand, uses the emotional element which can be manipulated up to a point but is a rich source of information. Somewhere in-between comes thin slicing with very high levels of accuracy (Ambady & Rosenthal, 2002) due to the exposure to a little dynamic information (more information about personality) but also limited time of interaction (reduce of distraction, like verbal communication, which can be used for enhancing impression management).

Facial expression as communication of emotion is highly involved in real world phenomena like deception and emotional contagion. The current study highlighted the way the face can betray lies due to its direct connection with brain activity. On the other hand, it has been advocated that face is the nonverbal element people first learn to control for delivering lies. A search through the relevant literature exposed that more human lying detectors were actually more accurate when observing the body than the face (Ekman, 2003). However, micro-expressions “reading” can be used to unmask hidden emotions with high levels of accuracy. People that are sensitive to “micros” are more accurate in detecting deception (Frank & Ekman, 1997). The other phenomenon discussed is emotional contagion which refers to affective reactions to facial expressions, where the receiver tends to mimic and finally converge emotionally.

The power of knowing how the face receives and gives information, plus the study of the underlying structures of all the phenomena that come as a result of that, seems significant in the area of business.

14. IMPLICATIONS FOR BUSINESS CONTEXTS
As advocated in the discussion, facial expression knowledge is significant during communicational attempts. So, how do the literature findings above integrate to the business context?

Research has shown that accuracy of reading facial expression and controlling them can be improved through training (Gabbott and Hogg, 2001) and suggested that business professional education should include N.V.C. training because it improves organizational outcomes (Sundaram & Webster, 2000). Professional training can incorporate basic N.V.C., facial expression knowledge and structures, but also more complex phenomena like emotional contagion and deception. In addition, the same training can contain basic or even advanced facial action coding for better understanding of the customers and co-workers psychology for constructing better organizational relationships. F.A.C.S. training can also be used in sharpening peoples’ abilities on detecting (or even suspecting) deception during the organizational procedures (for example job interviews as concerns inner-organizational deception, and credibility checks for potential bank loans to clients).

Apart from training, the awareness of the current literature findings could contribute to a different perspective to the way situations can be handled in every day professional life. A few examples are: awareness that static facial information creates an early stereotyped-directed impression might push effective decision makers to examine available evidence harder before judging. On the other hand, by knowing that first impressions that come from thin slicing someone can be really accurate, a bank cashier might be ready to set an alarm by sensing that someone looks suspicious. By knowing the meaning of negative facial expression, a salesman can save a lot of time by getting the “there is no way I am buying this” micros from a customer, with the same way a manager will “read” the micro-expression and rest of N.V.C. of an employee that uses the fake excuse “I was sick yesterday”. Finally frontline employees which know how to sent authentic, positive (but not exaggerated) and clear messages can give the sense of satisfaction to the customers through the process of emotional contagion.

Malcom Gladwell (2005) in his book “Blink: the power of thinking without thinking” wrote:

If you were to approach a one year old child who sits playing on the floor and do something a little puzzling, such as clapping your hands over hers, the child would immediately look into your eyes. Why? Because what you have done requires explanation, and the child knows that she can find an answer on your face (p.195).
Human beings begin to understand the value of facial expression from their early years. The way the face functions is fascinating; many muscles together transmitting thousands of meanings every day, by movement combinations. Facial expression is a nonverbal channel that receives a lot of research attention and some might claim it is only fair since it gathers the vast majority of the sensor organs, plus the brain, in its region. To conclude with, the need for more research and development in the area of the N.V.C. from the face seems noteworthy. Such kind of development can add a new perspective on viewing communication and constructing social reality.

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THE ZONE REALITY”. A DIFFERENT APPROACH TO DESTINATION BRANDING. THE CASE OF CYPRUS

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Abstract

During the previous decades Cyprus has witnessed an unprecedented growth on its tourist industry. This has contributed in the overall economic development of the country. However, since 2001 this development started to reduce making some experts to believe that Cyprus has reached a stagnation stage. This is the reason why the government of Cyprus has decided to develop a strategic plan for the years 2011-2015 aiming to develop the tourism industry and the positioning of the island on the international tourism scene. The aim of this article is, not to make criticism on the new strategy of Cyprus but to present a new and different approach in branding Cyprus as a tourist destination that is more focused on local initiatives and decentralization.

Introduction

Through market research, CTO determined that despite the fact that the “top of the mind awareness” level in the UK and Greece was high, (CTO, 2011) it was considerably low between other European tourist generating counties. Therefore, in 2011 CTO developed the new brand for the island: “Cyprus in your heart” following a specific marketing policy. This article presents the specific policy followed by the Cyprus Tourist Organization and incorporates literature of destination branding. Finally, the new approach in branding Cyprus will be presented and supported.

CTO’S Strategy for Communication

In its strategic plan for the years 2011-2015 Cyprus Tourism Organization tries to meet the following aims and objectives:

a) an increase in total direct and indirect tourism receipts
b) an increase in arrivals
c) dealing with the phenomenon of seasonality and subsequently the alleviation of the negative results it creates

d) improving the viability of tourist enterprises

e) upgrading the overall tourism experience offered by Cyprus by providing an enhanced tourist product with significant value added

In this comprehensive plan for the development of the tourism sector, the aspect of communication strategy plays a predominant role. The advertisement target is to reduce the external and internal problems Cyprus tourist sector is facing, by emphasizing the effective communication of messages that will urge the receivers to include Cyprus in their immediate travel and holiday plans. Therefore, CTO focuses on three pillars as listed below.

1. Creative design (Brand)
2. Planning of the purchase of time and space in advertising media
3. The evaluation of the advertising actions

The new brand “Cyprus in your heart” is programmed to be followed until the year 2013 with the provision to be use until the year 2015, which contradicts to the opinion that destination brand building is frequently undermined by the short-termism of the tourism organizations’ political masters (Morgan et al, 2010). During the implementation period, CTO will assess the success of the brand in relation to the predetermined aims and objectives. The following are the aims to be achieved by the new brand as set by the CTO, which will also provide the foundation for the development of any new brands in the future:

1. to promote the unique features and promises of Cyprus together with its competitive advantages, which can support the creation of an image that will differentiate from competitors and contribute to the increase of the awareness for the island as a tourist destination.

2. to take into consideration the need for emotional communication and the creation of anticipation and the necessary feelings that will urge potential tourists to visit Cyprus, coping with Morgan (2002) who supported that in building a meaningful destination brand, the essence is to create an emotional relationship between the destination and potential visitors.

3. to recognize the needs and possibilities and the degree of development of the outgoing market, the way of thinking of the people in the countries
where the tourist product will be promoted and the level of awareness for the tourist product of Cyprus.

4. to be able to adapt and develop during the branding period in order to cover the changing communication needs in relation to advertising and promotion of Cyprus. The brand should be able to include elements that will come up from the development of the tourist product in Cyprus, for instance, upgrading of existing products and creation of new products. In addition the messages of the logo should be able to adapt if necessary, in cases of positive or negative alterations in the global economic and political scenery.

5. to be easy to change in cases of emergency promotional needs, promotion of additional messages that have initially not been considered necessary, and in cases of tactical advertising whenever this comes up.

6. to provide the opportunity for the brand to develop and be communicated in traditional communication media: TV, press, external advertising (posters, leaflets, subways, buses etc), and radio, as well as on the Internet, digital TV and mobile telephony.

7. to be able to act as an umbrella that will shelter the promotion of the special interest products, the various partners in tourism that will promote their own campaigns, and to conserve and empower the desired identity and awareness of Cyprus, contributing in this way to the establishment of a brand identity for Cyprus.

The purchase of space and time in advertising media is selected by the CTO through international competitions. The contesters create their advertising campaign based on the targets set by the CTO. Due to the fact that the international completion will be repeated every year, CTO will reset the targets according to the development of tourist markets (results and prospective).

In tactic period of time the advertising campaign and the brand will be evaluated in order to measure its effectiveness and contribution in the achievements of the marketing goals. CTO recognizes, however, that a new brand will need around 2-3 years in order to yield results.
In terms of Publicity and Public Relations area, CTO is planning presentations, press conferences, Cypriot nights and other events in the tourist generating countries, but the focus will be on the tour operators especially in countries where the presence and resources of CTO is limited. CTO’s local tourist offices are systematically investing in this field and the efforts focus on the better cooperation between the offices. In addition, CTO is seeking the cooperation with Public Relations organizations that they have the technological expertise to create and maintain a positive image for Cyprus and reduce the negative publicity drawn mostly due to its national problem. Again, the effectiveness of the Public Relations efforts will be regularly assessed. CTO is also seeking cooperation with expert consultants and journalists who can assist in the development of a positive image for Cyprus.

Another aspect of communication is the advertising in cooperation with tour operators. The target here is to promote Cyprus destination and encourage tourist flows. This cooperation is particularly important in target markets where CTO has limited budget for promotion. In addition CTO encourages the personal contact with foreign tourist professionals, especially for the promotion of target markets like conference and incentive, athletic tourism, cruises etc. The lacking of human resources, however, is an important barrier and the suggestion is for either the recruitment of qualified staff or for outsourcing. Taking into consideration the great importance that third parties and their recommendations can play in the selection of destinations, CTO welcomes in Cyprus journalists, travel agents and tour operators, and other important individuals. The presence of Cyprus in the tourist exhibitions will be reassessed based on criteria that have to do with the size, maturity and structure of the different market, the effectiveness and efficiency of the participations etc.

The Idea

If someone visits the official website of Cyprus Tourism Organization he can easily understand the set of values and the benefits both emotional and functional (Cooper and Hall, 2008) that he can receive by visiting the island. This is obviously part of CTO’s efforts for re-branding, which seems that already are giving some fruits. The number of tourists visiting the island has increased from 2.172.998 in 2010 to 2.392.228 in 2011 and the effort for 2012 is to keep this 10% increase. However, in these turbulent times nothing should be taken for granted especially in the tourism industry, which is particularly vulnerable in economic downsings (Morgan et al, 2010). Today, more than ever before, there is a need to keep an open mind and be ready to adapt in the changes of the environment. My suggestion lies on
a new type of branding, where the local authorities and institutions will hold in their hands the tourist developments of their area and enjoy the benefits of their own efforts.

I was inspired in this new way of tourism planning some years ago when I was a student in the UK doing my postgraduate degree in tourism. I met an Irish student at the university and trying to socialize I introduced myself and told him that I was a Cypriot and that I was in the UK to do my masters degree. To my surprise I found out that he didn’t know where Cyprus is, and he was acting in a way that seemed he had never heard about Cyprus in his life. Then I tried to tell him the names of some cities in the island but still I got no reaction. Finally I decided to mention Ayia Napa, which is a popular destination for youngsters in Britain and Ireland. When he heard the name Ayia Napa he was very excited and told me that he visited the area in the past and that he had the time of his life. The whole incident was very instructive to me but, as I found out afterwards, it wasn’t so extreme after all. I realized that some Cypriot friends studying in the UK had similar experiences. In my mind if a small tourist village like Ayia Napa could be so much stronger brand that the whole of Cyprus, this means that every area on the island has the potentials in developing equally strong images to Ayia Napa, of course, by promoting not necessarily the same features than the features that are promoted in the Ayia Napa area.

Tourist Zones and Branding

As I mentioned earlier if someone visits the website of the Cyprus Tourism Organization he can realize that he can have different kind of experiences and do different kind of activities in Cyprus. More specific, the values presented by CTO are the following:

- Culture (museums and galleries, sites and monuments, cultural routes)
- Sun and sea (coasts and beaches, diving, sailing)
- Food and drink (products and recipes, local drinks)
- Events
- Religion (Unesco world heritage churches, religious routes, monasteries, churches)
- Cities (Lefkosia, Lemesos, Larnaca, Paphos)
- Cultural Routes (Aphrodite routes, religious routes, wine routes)
- Cycling routes
- Natural routes
- Conferences and incentives
• Weddings and honeymoons
• Sports and leisure (Golf, hiking, training)
• Health and wellbeing
• Rural and nature
• Cruises
• Learning

The truth is that the same type or quality of tourist product is not found everywhere in Cyprus. For example, the area of Ayia Napa and Protaras became popular to foreign and local tourists because of the high quality of sea waters and beaches. In contrast, in Paphos area the sand is completely different and in some areas it is dangerous for tourists to swim. On the other hand, most of the wine routes and Unesco world heritage churches are situated in the mountainous area of Cyprus in Troodes. This area could be a separate tourist zone able to attract cultural tourists, ecotourists and agrotourists.

The creation of tourist zones is vital for the implementation of such strategy. So there is a need for the “division” of the island in different areas that will develop their own brands serving specific set of values and unique characteristics or promises in order to differentiate themselves from the other areas in the island but also from competitors abroad. It is important to emphasize that the separation of the different zones need not to be based on geographic segmentation of the island in districts. Instead, it should be based on the different attributes each zone can offer to potential visitors and will help differentiate itself.

Consequently, the role of the National Tourist Organization will have to change. Its aims should be to supervise the actions of local tourist organizations and provide the necessary consultation and technical knowledge in order to assist them in their work and address one more problem that could be faced: the lack of confidence. (Morgan et al, 2010).

In addition, CTO should act as a mediator in cases of clash of interests between the different zones and also be the vehicle for the funding of the organizations through European funds. Furthermore, the creation and operation of a “Tourism Observatory” in CTO as suggested in Strategic plan 2011-2015 could be developed in order to carry out studies in the tourist sector, individually or in cooperation with the local tourism organizations.

With the division of the island in tourist zones, there is a need for local tourist organizations to be in charge of their area. At this point it worthies mentioning that
since 2008 six organizations operating in six different areas in Cyprus were developed in an attempt for local integration and decentralization. The aim was to tackle and resolve regional problems, deal with marketing and environmental issues, and contribute in the development of the area. However, it is admitted that they heavily rely on CTO and are unable to implement local tourism strategies. They do not have their own financial resources and they depend on state sponsorship, which oblige them to follow procedures followed in the public sector.

It is recommended that separate tourist organizations to be developed with their own board of directors, expert staff and most importantly their own budget coming from national resources. The local tourist organizations will be responsible to develop marketing strategies and planning in order to increase the flows of tourists in their area and maximize the benefits for the local residents. It is suggested that destination branding is difficult to be employed because destinations “have too many stakeholders and too little management control, have underdeveloped identities and are not perceived as brands by the general public” (Morgan et al, 2002:4). In addition, Horner and Swarbrooke (1996) argue that a good destination brand creates a vision that everyone in the destination can relate to. Indeed, branding requires the participation of all tourism elements in a destination, which is why it is considered so difficult to be achieved. (Morgan et al, 2002). It should also be noted that cooperation can sometimes be hindered by political pressures from some stakeholders that may behave on the basis of individualistic interests (Hall, 2004). However, with the creation of different tourist organizations these problems can be limited since the number of stakeholders in a tourist area will be significantly reduced as the chances for disputes, or unethical political practices, therefore increasing the possibilities for successful implementation of the branding strategy.

Designing destination brands can be a four step approach (Cooper and Hall, 2008).

1. Brand assessment: this begins with an assessment of the current situation of the destination brand including a review of the marketplace, visitors, stakeholders, influencers, competitors and industry conditions as well as the demographic and social setting of the destination. It will be based on facts and research on visitor perceptions, influencers and stakeholders. The stages will include:

   - A review of all previous research
   - A review of all brand communications and marketing plans
   - Analysis of data on competitors and visitor research
The effort will be to find the necessary data for the different zones with the use of CTO and the private sector in the area.

2. Brand promise: the brand promise is the essence of the commitment to visitors and the benefits (emotional and functional) that visitors can expect throughout the destination experience. The entire zone must commit to the brand if the promise is to be delivered, hence the need for the branding process to be inclusive of all stakeholders, including local residents.

3. Brand architecture: the architecture of the brand outlines the various messages to communicate the promise and the essence of the destination brand. Of course, the messages will depend on zone’s values. This process attempts to signal the destination’s values and positioning and increasingly tends to stress more emotional than functional benefits. The process also signals what the destination can deliver using a five-stage approach:

   - Choice of a destination brand that resonates with the visitor and sets the tone of the destination.
   - Graphics such as logos or visual symbols
   - A by-line that describes what the destination brand is all about
   - A tag line that is a phrase to clarify the destination’s emotional and functional benefits
   - The brand story, which is used to inspire visitors and explains how the brand came out.

4. Internalizing the brand: this is the road map for how the destination organization delivers the brand promise on the ground at the destination through influencing and training employees, partners, stakeholders and residents. This enables and empowers the delivery of the brand promise at the destination.

A very common problem from smaller places is the fact that place branding is an international exercise by default, yet because they are not big consumer corporations, and few destinations or small countries have the money for marketing. Yet, with the arrival of the Internet there is even for the smallest niche players in nation-branding there are still bargains for anyone who knows how to recognize them (Morgan, 2002). It is therefore necessity for the local tourist offices to exploit Information Technology in the best way possible in order to achieve maximum results.
The marketing efforts in some zones will intensify during high-season and in others zones during low season depending on the tourist product they are offering. For example, the mountainous zone can actively promote itself as a skiing destination during the winter periods. It can also contribute in the diminishing of the problem of seasonality in the island.

The different brands will be communicated individually, so instead of advertising Cyprus as a tourist destination there will be different advertisements for the different zones. If for example, one of the zones will be the Troodes tourist zone, then the advertising campaign on the different media will focus on Troodes area not the whole Cyprus and the message will reflect to the values of the specific areas and the advantages that will be earned with a visit on the mountains.

Promotion can be designed to persuade rationally by providing factual information that potential visitors need for decision making. Promotion can also be designed to use emotional persuasion to attract potential tourists. The different methods available to promote (promotion mix) include advertising, sales incentives, public relations, personal selling, and direct marketing (Kolb, 2006).

However, it is true to say that some zones may need new attractions to improve the quality of life, to sustain current business and public support and to attract new investment, business, or people (Kotler and Haider, 1993). Taking this opportunity I would like to emphasize the importance of the development of a casino in Cyprus aiming to satisfy the needs of the tourist industry. With proper and regulated operation of a casino in a way that will reduce possible negative social impacts on the local people, Cyprus can gain important benefits. The casino could be built in one of the tourist zones and consist the main value offered to its visitors. In this case, the tourist zone will be most benefited by the attraction of quality tourists with high disposable income. Only one casino should be licensed in order for all the resources of the public and private sector to be invested in one single establishment, securing its high quality in terms of the building itself and the services provided. In addition, the development of two or more casinos in different zones could create competition which is not desired.

**Conclusions**
This article tried to provide a new way of thinking in destination branding and tourism management, which is revolutionary for Cyprus. In a country where still many areas of public governance is highly centralized, someone could argue that it is not a realistic approach. It is also recognized that marketing efforts of most small areas rely very heavily on hard-working people who may not have a degree in marketing, who depend on part-time and volunteer staff, and who often have limited resources to engage outside professional assistance (Baker, 2007).

However, as economic recession continues and monetary pressures are put on peoples and governments, there will always be space for reforms and adaptations. The branding strategy of CTO as briefly presented above seems to be moving in the right direction, however, it lacks a vision for tomorrow’s tourism in our country. The effort focuses in keeping facts as they are today instead of the real sustainable development of the industry in the future.

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Cyprus Tourism Organization

“The Zone Reality”. A Different Approach To Destination Branding. The Case Of Cyprus


Research at CDA College

From the Editor

CDA College aims at excellence in research and is fully committed to developing and promoting research activity. Research, both pure and applied, being an essential academic activity is an integral part of CDA College’s mission. Research and advancement of knowledge as intellectual activities, are an integral part of our educational environment that fosters innovation and enthusiasm for excellence. Research at CDA College is concentrated in the areas of Humanities and Social Sciences, Pure and Applied Sciences, Economics and Management.

The Faculty at CDA College aims at publishing papers in International Academic Journals and at submitting and presenting papers at International Conferences. The development of the research skills of the Department’s team is not only one of the main goals of the team members but this effort is also financially and ethically supported by the Administration of CDA College. Contacts with other research institutions and organisations for research collaboration and for research support play a vital role in the development of the researchers and of the Research Department as a whole.

The Research Department of CDA College targets at continuous development, at enriching its research activities and at strengthening the cohesiveness and the collaboration among its members.

The Cyprus Research Facts is a refereed publication with an international character and a broad perspective. It covers a wide spectrum of areas of interest and publishes empirical, theoretical and methodological articles as well as book reviews.

Aims and Objectives

The activities at the Research Department are centered at enhancing theoretical and empirical research, at developing solutions and guiding thinking to current and future problems, and at creating new knowledge.

As a research department, however, we aim for higher achievements both internally as an academic institution, and externally in the public and private sectors. Our vision is through research to contribute to the Cyprus society, to the academic
community and to societies beyond the boarders of the Republic of Cyprus. Thus, our current and future research projects cover areas that sustain quality of life and performance, and contribute to a better implementation and monitoring of improvements and changes.

The Research Department, being sensitive to the societal needs as well as to the needs of the business world both public and private, has set the following as its main objectives:

The Mission of the Research Team is:

"To enhance theoretical and empirical research, to develop solutions and guide thinking to current and future problems, and create new knowledge taking into consideration leading-edge technology and socio-economic developments globally."

As a research team we aim for higher achievements both internally as an academic institution, and externally in the public and private sector. Thus, our current and future research projects cover areas that sustain quality of life and performance, and contribute to a better implementation and monitoring of improvements and changes.

The Main Objectives Of The Research Team Are:

- To carry out academic research in order to support the college's teaching and project activities.
- To carry out pure research in collaboration with domestic and international institutions, in order to enhance expertise of the Research Team of the College.
- To undertake research projects covering issues, that have an impact on the Social, Economical and Technical developments of the Public and Private sectors in Cyprus and abroad; and
- To Provide Independent Research Services to external organisations.

With the increased complexity and demands for a better achievement, both internally as an academic institution and also externally in the Public and Private sector, we aim to carry out research and development projects which will enhance and sustain quality of life and performance, and contribute to a better implementation and monitoring of improvements and changes.
Research Interests and Opportunities for Collaboration with CDA College

The Research Department undertakes activities in the following areas:

The Research Team of CDA College has several research interests in the following areas:

- The Dynamic Business Environment of the Service Industry
- Management and the Leading-edge Technologies applied in business.
- Analysis of Contemporary and innovative marketing theories and concepts
- Innovative Marketing Strategies
- Globalisation Vs Localisation impacts in Business
- Information Technology and Science.
- Wireless Networks and security. Computer Ethics.
- Politics and Economy.
- Evolution of man and other species
- Educational Management
- Dyslexic children.
- Creative Drama in School.
- Greek and Roman Civilization and Archaeology.
- Political and Legal translation methods.
- Globalisation of Education

The Cyprus Research Facts

The Cyprus Research Facts is a refereed publication with an international character and a broad perspective. The journal aims to cover a wide spectrum of areas of interest, including among others, Humanities and Social Sciences, Pure and Applied Sciences, Economics and Management. It publishes empirical, theoretical and methodological articles. Survey research, commentaries and book reviews are also of interest.

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