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CIJM Volume 19, in Memory of Professor Bob Ritchie

As a highly respected academic, author, and educator, Prof. Bob Ritchie has made a significant scientific contribution in the broader area of risk management. He published widely on topics including organisational risk management, supply chain risk management, risk and uncertainty, business intelligence and risk resolution. In his scholarly work Prof. Ritchie has also explored the impact of ICT developments on global competition in the marketplace and through his research he promoted the fundamental need to balance risk, effectiveness, and profitability. He is the author of best-selling books 'Managing Information Systems' (1991), 'Managing Business Risks' (1993), and 'Business Information Systems' (1997). In addition to being an exceptional academic, Prof. Ritchie supported P.A. College, Larnaca, Cyprus in manifold ways. He was an external examiner and served as an academic advisor for P.A. College for more than 25 years. He was eager to share his knowledge and expertise with both the academic and administrative staff at P.A. College by delivering research and training seminars. He was also the initiator of the Cyprus International Journal of Cyprus and efficaciously served as the Editor-in-Chief for the Journal for a series of years. Aside from his many achievements and accolades as a leading researcher, Prof. Ritchie will be remembered for his distinguished ethos. He was a person who worked tirelessly to promote the discipline as well as provide opportunities and develop the careers of future generations of leaders and entrepreneurs. It is with great honour that we dedicate the present Volume of CIJM to Prof. Bob Ritchie for his support and inspiration.

CYPRUS INTERNATIONAL JOURNAL OF MANAGEMENT

Editorial

The Cyprus International Journal of Management is now in its nineteenth volume of publication and for the first time it will be available in electronic format hence opening up avenues for sharing the authors' research with other academics, students, and the general public. It is expected that this endeavour will open up opportunities for future collaborations with fellow researchers and academics as well as with practitioners both in Cyprus and abroad.

The present Volume of CIJM is proudly dedicated to Prof. Bob Ritchie who was the initiator of the Journal and served as a chief editor for the Journal for many years. We intend to maintain the Journal's status as one of the high quality management oriented journals originating in Cyprus where academics, students, and professionals can publish their research and projects.

The Journal offers a forum for publishing empirical and theoretical papers as well as literature surveys on a variety of contemporary issues in the broader field of management. Previous volumes included articles on business management education, management of information systems, managing challenges in the banking, SME, and auditing sector, entrepreneurship and innovation, customer satisfaction, learning organisations and knowledge management amongst others.

In this 19th volume, the faculty members of P.A. College are given the opportunity to work closely with graduate students of the College to present their joint research efforts. The articles presented cover a wide range of topics including corporate social responsibility and product innovation, the factors affecting the choice of higher education institutions, the role of mathematical skills in higher education, social aspects of information systems development, and the effects of mobility programs on accountancy firms.

In the first paper, L. Andreou discusses both the benefits and challenges of introducing technology in mathematics classes, a subject which comprises a core module in many undergraduate degrees including degrees in business administration and business computing. The author emphasises that low performance of students in Mathematics is a serious trend at all educational levels and the use of technology in this subject can help students acquire problem solving skills, develop critical thinking and increase their understanding of mathematical concepts and ideas, which can then be applied in real-life business contexts.

The second paper, by R. Stavrou and M. Constantinou, examines various factors impacting Cypriot students' choice of Higher Education Institutions (HEI) including social and economic factors, advertising strategy, type and quality of the programs offered by the HEI, and the HEI's location. Furthermore, the study investigates how HEIs apply marketing practices to attract potential undergraduate students. The findings stemming from this study provide important insights for HEI directors and marketing campaign managers, helping them to better understand the motives of prospective students towards an increased level of competitiveness, increased student admission rates and the satisfaction of the potential students.

In the third article, co-authored by A. Kekkou, M. Markou and A. Piki, an attempt is made to emphasise the role of information systems development in promoting breast cancer awareness. The study has technological, health-oriented and social implications as it does not merely focus on the value of sharing relevant scientific knowledge online, but also on providing a practical web-based tool for facilitating the early diagnosis and prevention of breast cancer. Focusing on the social dimension of systems development rather than presenting solely the technological phases of the systems development lifecycle is an instrumental aspect of this study.

The fourth paper, by A. Andreou, examines and analyses the effects of the mobility of professional accountants on their employing accountancy firm. In particular, the study focuses on the impact of the skills and professional competences that the individuals can develop through secondment on the host organisation; the increase of the quality of their work; the effect on their job satisfaction and loyalty to the firm; and the risk for the organisation's resources arising from the possibility that some employees participating in such a program would not return back to the organisation in Cyprus. The findings resulting from this study have important implications for accountancy firms with regards to the satisfaction and the professional development of their employees, as well as the quality of services offered to their clients.

Finally, in the fifth paper of the current volume, M. Skordou and L. Sergiou evaluate the relationship between Corporate Social Responsibility (CSR) and product innovation focusing on green environmental products, specifically in the drinks manufacturing industry within the Cyprus business environment. It is suggested that CSR can contribute to the protection of the environment and can assist developing green strategies for saving energy and resources. The study findings encourage companies regardless of their size, to act as socially responsible, with the main aim to produce products which are innovative and, at the same time environmentally friendly. The study therefore has implications for business managers, policy makers, and the society as a whole.

Encouraging a wide range of contributions from both experienced and new researchers, and welcoming interdisciplinary research topics has always been a characteristic of the Journal. The Journal welcomes contributions both from academics and professionals with insight into the business world. In future endeavours greater emphasis will be placed on bringing these two worlds - the academic and the professional - closer in order to create synergies and generate genuine opportunities for learning from and informing each other. In this way Prof. Bob Ritchie's vision will continue to inspire the rich and diverse management studies that will be published in the future issues of the Cyprus International Journal of Management.

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The Contribution of Technology for Evolving Mathematical Skills in Higher Education

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Abstract

Purpose: The purpose of this review article is to examine whether the use of technology in mathematics classes contributes in evolving the mathematical skills of students in Higher Education.

Design: The knowledge and research discussed in this paper derives from books and literature review articles. Empirical investigations (qualitative/quantitative) were also reviewed. Google Scholar was used as the main source as well as electronic databases. The majority of papers reviewed are published in journals and conference proceedings.

Finding: The benefits of introducing technology in mathematics classes are various. Students acquire better problem solving skills, critical thinking and can fully comprehend mathematical concepts and ideas. Learners' higher performance results to alternating their perceptions and to forming a positive attitude towards the subject of Mathematics. Particularly, the author supports the implementation of technology in mathematics education and highlights the necessity of finding effective ways in which technology can be applied to all educational levels. However, through this new teaching approach, challenges arise. Some of the obstacles that prevent the absorption of a technology-based teaching method are of technical nature (time consuming, technical failures, teachers' limited knowledge on the use of technological tools etc.). The most important barrier though, is the teachers' perceptions regarding these innovative teaching techniques.

Implications: The low performance of students in Mathematics is a serious issue that needs to be resolved. So, despite the practical difficulties these teaching methods might have, it is essential to introduce technological tools in mathematics classes.

Originality: The following study promotes the implementation of technology in mathematics classes and encourages teachers to develop innovative teaching strategies.

Keywords: Technology in University-level Mathematics, Teaching Mathematics, Technology in mathematics classrooms.

1. INTRODUCTION

The massive evolution of technology over the last thirty years has had an impact on most aspects of our daily routine. Different and new types of technological tools available to use, promise changes that will make our lives easier and simpler. As expected, these innovations have affected education in general and more specifically mathematics education. The contribution of technology in enhancing mathematical knowledge and evolving students' mathematical skills at all educational levels has been investigated by many researchers over the years. Due to the multiple options of technologies to use and their accessibility, high expectations of rapid change in mathematics teaching evolved (Kaput, 1992). Studies conducted by various authors all over the world have proven that there are countless benefits when using technology in mathematics classrooms. However, the transition from the traditional teaching techniques to innovative didactical methods is not easy. Challenges and barriers seem to arise due to these changes and as a result the integration of technology in mathematics education is happening at a slower rate (Lavicza, 2010). This paper contributes a review of previous studies presenting the benefits of using technological tools and how these tools enhance students' mathematical abilities. Also, it discusses the obstacles that emerge, preventing the application of technology in mathematics didactical strategies. The teacher's role is fundamental in implementing forward-thinking strategies. Besides the practical issues that may lead to avoiding using technological tools, the main obstacle is the teachers' beliefs and attitudes towards mathematics education with technology. Mathematicians question

the way that technological tools can improve their teaching techniques and help students achieve a better performance in mathematics (Adiguzel and Akpinar, 2004; Ajagbe et al., 2011; Mkomange and Ajagbe, 2012). However, research revealed that it is of high importance to overcome these difficulties and change the way Mathematics are taught, in order to improve students' mathematical knowledge (Devlin, 1997). The use of appropriate technological tools would contribute to creating a new and interactive learning environment that would motivate students in order to show greater interest in Mathematics and manage to fully understand the mathematical concepts (NCTM, 2000).

2. LITERATURE REVIEW

In order to explore the contribution of technology in mathematics education, a literature review of previous studies is presented in the following subsections. Overall, authors consider technology as a solution to the fact that students preserve a negative attitude towards learning Mathematics. The countless advantages of implementing technological tools in mathematics teaching strategies can lead to the elimination of this problem by transforming students' beliefs. However, such a rapid change is only applicable when taking into consideration the obstacles that arise and find ways to overcome them.

2.1. Students' Perceptions of Mathematics

Studies conducted by authors from all over the world, highlight that Mathematics is valuable. Various aspects of Math-

ematics are incorporated in teaching Higher Education students, applied to almost all professions and our everyday life (Okello, 2010). Due to its high importance, researchers shifted their attention towards examining and finding the most effective and successful methods of teaching and learning Mathematics (Artigue, 1999). Through mathematics education, students manage to enrich their knowledge, evolve their critical thinking and acquire problem solving skills.

However, for students, Mathematics is one of the most difficult subjects. The abstract mathematical concepts and the challenging activities, often make students feel anxious and confused. Furthermore, the necessity of memorising formulas and rules in order to be able to deal with problems and calculations, has led to a belief that Mathematics is monotonous (Waits and Demana, 2001). This negative attitude of students has a serious impact on their performance. Studies showed that students at universities have inadequate knowledge and skills in Mathematics (Artigue, 1999; Buteau et al., 2009; Okello, 2010). For example, although they may be good in calculations, they are only able to complete tasks that they are familiar with. The majority of students shows no interest in adapting and fully comprehending mathematical knowledge. They compromise by learning typical procedures and following standard steps just and only to complete given tasks (Artigue, 1999). Many factors contributed to having this unwanted situation. The main issue is students' low level of confidence regarding their mathematical skills. To succeed in Mathematics, one must first believe in themselves and in their own abilities (Boyles and Contadino, 1997).

In an era where technology thrives, it is expected that the field of Mathematics would be affected as well. Technological tools and unique devices used in universities create new conditions under which students' interest can be intrigued (Bhatti et al., 2017). Such innovative pedagogies promote better communication and collaboration among students, improve the procedures used when handling different mathematical tasks and evolve their critical thinking. Therefore deeper and substantial mathematical understanding can be achieved when technology is applied in mathematics classrooms (Niess, 2005).

2.2. Benefits of Technology in Education

Through their academic lives, from primary to Higher Education, students state without hesitation that Mathematics is the most complicated subject. To change this stereotype and find solutions to this problem, researchers explored new ways and methods to teach Mathematics. Integrating technology in mathematics classrooms offers numerous benefits. Studies show that when using technological tools, teachers manage to form an environment where students can thrive (Bhatti et al., 2017). Although many tools operate long calculations accurately, making mathematical activities less time consuming, technology is not just a substitute to the pencil-and-paper procedure (Goos et al., 2003). Interactive instruments present mathematical concepts in such ways that enable students to alternate or build upon previous understandings (Goos, 2010). Learners are no longer passive receivers of mathematical knowledge. Technology provides them the means to experiment, investigate, ask questions and evolve their thinking. They become more active and they focus on learning the mathematical concepts rather than just memorise standard procedures (Farrell, 1996; Makar and Confrey,

2006).

At universities and colleges, technology is implemented more extensively than in secondary education. The most commonly used type of technology in university mathematics education is the Computer Algebra Systems (CAS). Lavicza (2006) defines CAS as any software package that operates numeric and symbolic computations and visualizes mathematical expressions. Some examples of CAS are Derive, GeoGebra, Maple, Matlab etc. GeoGebra is widely used in mathematics classrooms since it combines features that are useful to algebra, geometry and calculus. This software package is free of charge and available online, therefore easy to access anytime and anywhere. When using GeoGebra, difficult concepts, such as functions, are visualised and therefore become more understandable. Graphical representations of functions can be drawn accurately within seconds, and therefore are more time efficient compared to sketching the graph by hand. Mathematicians can then focus on changing the parameters of the function by using dynamic sliders. Changes are presented automatically on the screen, helping students understand how and when the parameters of the function alternate its shape and form. Such dynamic examples, regarding not only calculus but algebra and geometry as well, can be easily demonstrated in mathematics classrooms when any type of CAS is used (Hohenwarter et al., 2008).

Due to its nature, Computer Algebra Systems, create an interactive environment, intriguing students' interest, making them question and explore the mathematical knowledge. In Higher Education, statistical analysis is used in business, economics, marketing, accounting, medicine and many other fields. Therefore, it was only expected that technology would also have an impact on how Statistics is taught in mathematics classrooms (Moore et al., 1995).

SPSS, Minitab and R are only a few of the statistical packages used by mathematicians for analysing data and interpreting statistical results. In addition, for simpler usage such as organising and presenting data, constructing graphs and charts, spreadsheets like Excel are available on any computer. These technological tools execute difficult calculations and visualise confusing statistical concepts, helping students achieve a better understanding of the subject (Chance et al., 2007). Through technology, learners can obtain the ability of not only performing a statistical analysis correctly, but also interpreting the results in order to reach meaningful conclusions that are generated to a wider population.

Since innovative pedagogies are introduced, the traditional teaching methods of Mathematics are questioned on their effectiveness. The revolution of information and communications technology (ICT) results in changing the way academic tasks are completed (Ajagbe et al., 2011). Group assignments involving the use of ICT promote better collaboration among students and greater communication. When working in groups, the participants share their thoughts, exchange ideas and evolve their problem solving skills. According to the National Council of Teachers of Mathematics (NCTM, 2000) principles and standards for school mathematics, the presence and flexibility of technology provides extraordinary opportunities that lead to redefining the appropriate mathematics content that students must be taught in order to acquire the knowledge in the best possible way.

Furthermore, applying technology in mathematics education is beneficial to students and teachers as well. Mathematicians use technological tools to demonstrate concepts dynam-

ically, complete difficult tasks and make abstract ideas tangible. Innovative teaching strategies improve students' mathematical understanding and facilitate them to achieve a higher academic performance, evolving their critical thinking and mathematical skills (Buteau and Muller, 2006). Despite the advantages of technology-based mathematics education, challenges arise that prevent its emerging implementation.

2.3. Challenges and Constraints

In an era where everyone uses technology at all times (mobile phones, laptops, tablets etc.) it seems rather peculiar that technological tools are applied in education on occasional basis. Some barriers that prevent these innovations are of technical nature. Investigating mathematical concepts and ideas using interactive tools in class requires more time. Time causes frustration to teachers, since the appropriate curriculum must be covered within a specific number of teaching hours. Another issue is the fact that technological tools may fail during class thus disrupting the lesson. Therefore teachers must be prepared for each scenario and always have a back-up lesson-plan.

Studies showed that although students and teachers are familiar with technology applications in their daily routine, they are not always capable of using the type of technology that is implemented in mathematics classrooms (Chance et al., 2007). Technology-based methods have proven their effectiveness through experimental studies. In contrast, the traditional method successfully enhances students' knowledge for years. Relying on the known methods and the usual strategies, mathematicians feel confident that they will achieve their teaching goals (Gano, 2011).

To explore the reasons why technology is not rapidly integrated in mathematics education, researchers focused on the teacher's role. Teachers' didactical strategies are influenced by their personal experiences and are structured based on their beliefs (Aguirre and Speer, 2000). The greatest challenge regarding the integration of technology is to change teachers' beliefs. According to Hollifield (2001), in order to adopt technology in mathematics classrooms successfully, mathematicians must be convinced that these innovations are beneficial not only for students but for them as well.

A reason that makes teachers feel uncomfortable using technological tools in mathematics education is the fact that they are not all well trained to use these tools. Most mathematicians have years of experience using the traditional method of teaching. Therefore they have inadequate knowledge on how to use the various technologies. Educational support must be provided to teachers in order to succeed in alternating their negative attitude (Pierce and Ball, 2009). Technology is not implemented in mathematics classrooms as a substitute to the teacher. When used properly, it assists the teacher to enrich the students' knowledge, answer questions and support the students (Feenberg, 2001). Due to the fact that several types of technologies are available, it is up to the teacher to choose the appropriate means depending on the subject. Studies suggest that the learning tasks that are given to the students should be structured in ways that involve technological tools, without declining from the original purpose which is the comprehension of mathematical knowledge (Chance et al., 2007). According to Moore, mathematicians should never forget that "we are teaching our subject and not the tool" (Moore, 1997, pp. 23). Caution must be taken

in order to keep the students on the right path of exploring Mathematics and not the technology used to teach the subject. Previous papers show that when teachers are familiar with technological tools it is easier to design the lecture properly, so that it will be less time consuming and more interesting. This implies that they take into consideration all the constraints but they are capable of eliminating them. Enhancing teachers' technological education is a proposed solution that contributes to overcoming the restrictions that arise (Cooney and Wilson, 1995).

3. CONCLUSIONS AND IMPLICATIONS

This paper provided an overview of previous studies that investigate the integration of technology in Mathematics education. Comprehending and digesting mathematical concepts is challenging for all students at all educational levels. The majority of the studies referred to this issue as a result of students' low confidence in their mathematical abilities. Researchers focused on how technology integration can contribute to changing students' negative attitude towards the subject of Mathematics. Several authors present the multiple advantages of this evolutionary approach of teaching and learning Mathematics that contribute to the development of students' mathematical skills. Pedagogies that incorporate the usage of technological tools transform learners' didactical experiences and alternate their negative attitude towards the subject of Mathematics. Abstract concepts become tangible and long calculations are accurately operated within seconds. Various software packages are used in Algebra, Geometry and Statistics, assisting students to understand these difficult mathematical fields.

At the same time, many researchers also highlight some barriers that prevent mathematicians from actually implementing technology in their classrooms. These barriers are not to be underestimated. Since the structure of a mathematics lecture depends on the teacher, researchers also studied how the teachers' beliefs and attitudes to innovative didactical techniques affect the rate at which these changes take place.

However, the students' role is as important as the teachers' perceptions. There is not enough research that investigates students' beliefs (Okello, 2010). It is essential though to explore students' perceptions about incorporating technology in the teaching of mathematics in Higher Education. More evidence is necessary on the impact that technology may have on students' performance in Mathematics, critical thinking and self-confidence. Through this literature review, it is clear that authors support the idea that using new methods instead of the traditional teaching method, would contribute towards changing the negative attitude that students have towards Mathematics as they would, more easily, acquire better understanding. Therefore, more research needs to be conducted to suggest effective ways to eliminate these obstacles and promote the application of technology in mathematics education. Although the findings of studies conducted at school-level (primary and secondary education) could apply to tertiary education as well, more research needs to be conducted concerning the sector of Higher Education (Lavicza, 2007). The conditions under which Mathematics is taught in secondary education differ from those in Higher Education. Therefore insights into the current teaching practices used at universities by mathematicians need to be explored and future research

should focus on Higher Education. The didactical strategies of Mathematics at universities and colleges should not be neglected. In a world where technology evolves day by day, affecting humans' life in various ways, it is of great importance to consider its role in education as well.

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Leontia Andreou received a B.Sc. degree in Mathematics and Statistics from the University of Cyprus, in 2011 and an M.A. degree in Didactics and Methodology of Mathematics from the same university in 2013. In studying for her Master's degree, Ms Andreou specialised in specific techniques and pedagogical methodologies relating to the instruction of students for the purpose of acquiring comprehensive mathematical knowledge. Her research interests include the development of innovative methods regarding the development of students' mathematical skills in Higher Education. Ms Andreou is employed as a full-time Lecturer in Mathematics at P.A. College since September 2015.

Factors Impacting Cypriot Students' Choice of a Higher Education Institution (HEI)

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Abstract

Purpose: This study defines and examines the factors impacting Cypriot students' choice of Higher Education Institutions (HEI). Primarily, the study identifies the various factors such as social, economic, advertising, type and quality of the programs offered by HEIs and HEIs' location. It then examines the impacting level of the aforementioned factors on the students' decision-making process of selecting a particular college/university. Furthermore, the study investigates whether and how HEIs apply marketing practices to inform and attract the potential undergraduate students.

Design: Both a positivistic and a phenomenological paradigm were applied. Quantitative data was collected through questionnaires given to a stratified random sample of existing HEI students and analysed via SPSS's descriptive and inferential statistical methods. Also, qualitative data was collected through semi structured interviews with marketing managers and/or owners of HEIs followed by thematic analysis.

Finding: The ensuing findings suggest that the social factor, HEIs' location and variety of programs' offered do not have an impact on the decision-making of students' choice. However, advertising (mainly billboard advertising), the economic factor (tuition fees and scholarship offers) and the quality of faculty have an impact on the students' choice of HEIs. It is significant that marketing managers/owners of HEIs apply well planned marketing practices since it is crucial for them to provide beneficial information to their target market that seems to be in search of such information.

Implications: The findings could serve as a blueprint to marketing managers/owners of HEI for an increased level of competitiveness in the HEI industry, increased student admissions rate and satisfaction of the potential students.

Originality: There is no other current study that focuses on the identification and examination of the impacting factors of Cypriot students' initial choice of HEIs or the investigation of HEIs applied marketing practices. Hence, the study's findings supplement the existing knowledge on the aforementioned topic.

Keywords: Higher Education Institutions; Higher Education Institution choice; students' decision-making process; impacting factors, marketing practices.

1. INTRODUCTION

Education is one of the most momentous investments since it gives the young generation the opportunity to improve knowledge and skills in order to fulfill their dreams and find a well-paid job. Students become more anxious with their decision about their future after leaving high school. Furthermore, it is significant for undergraduates to choose a Higher Education Institution (HEI) that will satisfy their expectations. For instance, students seek to find Institutions with quality infrastructure and well-qualified, professional tutors who can teach and communicate in a way that assists students' comprehension.

Whilst previously acquiring a Bachelor degree or attending a Higher Education Institution was a dream for lots of people, nowadays it is a risky path (Ilie, 2014). Due to the current economic recession, there is a decrease in job opportunities. Hence, in order to obtain a job, it is necessary to be more qualified and competitive in the job market. Ultimately, a Bachelor degree would not be sufficient and unavoidably further academic or professional education would be vital. To be more precise, people become more knowledgeable and they invest a lot in education. However, they do not always get full return on their monetary investment as they could end up getting low-paid jobs, or not enough pay to cover student loans. As a consequence, tight education budgets make students' choice of a HEI more challenging.

The purpose of this study is the investigation of the factors

that impact Cypriot students' choice of public or private HEIs. The findings can be a valuable source for marketing managers and/or owners of HEIs and can help in more strategically targeting potential students and after admittance keeping them satisfied.

It is noteworthy that lots of studies have been carried out on factors that influence students' choice of HEIs, but there is little empirical research that focuses on what managers/owners do in order to attract them. Consequently, this study also explores whether and how advertising impacts students' decision-making regarding their choice of HEI. Moreover, considering the universal importance of the social and economic factors, there is an interest to study the students' perceptions of various factors including the socioeconomic ones and their impact on choice of HEI.

2. STUDY BACKGROUND AND LITERATURE REVIEW

It is remarkable that many related studies have been carried out related to this research topic (Petruzzellis and Romanazzi, 2010; Ilie, 2014; Sidin et al., 2003) and this indicates its importance in the higher education industry, as well as the increasing market of potential HEI students.

2.1. Study Background

There is old research evidence in Cyprus (Menon, 1998) that focused on Cypriot students' influencing factors of higher education over direct employment at the end of their secondary education. In addition, a more recent study (Hadjikyrianiou, 2007) concentrated on the influential factors of students' choice who attended only a specific college in a specific city of Cyprus. There is, thus, a necessity to research the most current influential factors for the choice of HEIs, both public and private colleges and universities, without comparing to alternative options, as in the case of (Menon, 1998). Moreover, there is the need to research a more representative sample of Cypriot students and not just a sample of students of one Institution. Consequently, this is the research gap that this particular study will highlight and fill through its differentiated objectives.

2.2. Literature Review

A number of researchers' work reflects the fact that potential HEI students go through a decision process where they identify and evaluate a number of factors before making their final choice of where to invest for their education; before choosing their pylon for future career and professional success. This decision is not an impulsive one. It is rather an evaluation of a number of impacting factors.

2.2.1. Marketing practices applied by managers/owners of HEI

The marketing mix composition is a strategic requirement by any organization selling tangible goods or services. In our case, HEIs are organisations offering the service of education and need to strategise on the development of their marketing mix; the 7 Ps (Product, Price, Place, Promotion, People, Personnel, Process and Physical evidence) which can act as an enlightening, informative factor to potential students. Through the marketing mix, which is the most fundamental concept of marketing, a HEI could apply a set of marketing tools in order to construct a desired response in the target market.

The marketing mix can be a great contributor to students' decision-making process. HEIs should specify the elements of marketing mix which are more substantial determinants for students' choice, such as the P for price. It must also be noted that Hossler et al. (1990) examined the impact of communication channels like advertisement, covering the Promotion part of the marketing mix, on student's choice of HEI. Findings show that radio and television advertisements could be a good vehicle for marketers to communicate with potential students.

In addition, Ivy (2001) examined the marketing aspects that HEIs might use in projecting their image for student recruitment in the UK and South Africa. Findings revealed that the image of new UK Universities promoted through marketing activities is quite different compared to that of the older UK Universities, because of a stronger emphasis on how to sell their HEI. Student union activities and international exchange programs were associated with UK HEIs. Likewise, other recent studies (Beneke, 2010; Bunzel, 2007; Belanger et al., 2002) also focused on the importance of engaging in marketing and branding programs and generally how brand management in HEI can be beneficial. Enhancing a university's reputation

leads to a positive impact on university rankings improving institutional branding with the effect of decreasing perceived risk for potential consumers.

Also, marketing practices such as promotion and branding programs allow the HEI a degree of steadiness in the competitive market place. Chapleo (2010) and Pinar et al. (2014) agree that university branding is fundamental. It can be a solution in the antagonistic and complex marketplace of higher education. In addition to this, Ramachandran (2010) stated the difficulty that might appear since the application of marketing strategies in the sector of HEI, is different from marketing in other sectors. HEIs sell a service and it is more challenging to develop the marketing mix for a service rather than for a tangible good.

Existing literature reflects the unanimous importance of building a HEI brand and promoting it through the development of a marketing mix, but there is insufficient evidence as to which marketing practices are most effectively applied for enhanced results.

2.2.2. The impact of advertising on students' choice of a HEI

According to Moogan (2011), managing brand image, evaluating advertising medium effectiveness and accumulating market intelligence are essential issues that HEIs practice. This is mainly because potential students need precise information to help them in their decision-making. HEIs ought to make a research of the aspects that influence students' decision and try to adjust and modify their operations in order to satisfy their target audience. Clearly, this highlights the importance of marketing research that assists in the development of any marketing action and decision.

Durkin and McKenna (2011) also report that advertising intrigues the student population in regards to HEI programs and services. Correspondingly, it enables students to have a rational response and evaluation of HEIs' advertisements. It was also mentioned that pupils have low awareness related to any university advertising. This outcome was revealed by the creation of six focus groups (4th, 5th, 6th and upper 6th year school pupils) that were exposed and tested on numerous branding and advertising aspects. A well-planned advertising strategy with the right types and frequency of ads will, thus, be necessary for a greater awareness.

Additionally, Bansal and Voyer (2000) mentioned that it is a common statement that word of mouth (WOM), a powerful form of advertising, is more dominant compared to other forms of advertising. Thus, WOM has a great power to create either positive or negative images for a HEI and based on that image the student will generate his/her decision.

Researchers agree that advertising is vital for any HEI. They have to apply advertising strategies in order to sustain and boost their competitiveness. Advertising would be a great way of appealing to and influencing the potential students.

2.2.3. The impact of economic factors on students' choice of a HEI

According to the study of Law (1997), students choose distance learning in education management programmes because distance learning could assist the economies of scale by minimising the course and living costs. It was also stated

that distance learning can offer the opportunity for diminishing attendance and maximising independent learning. Hence, distance learning could be an important, indirect economic factor influencing the decision-making of students. Moreover, Lauer (2002) mentioned that the chance of receiving higher education is influenced by labour market prospect expectations. "The absolute level of personal unemployment risk appears to be a strong incentive to participate in higher education, more than the reduction of the unemployment risk due to a higher educational degree. As far as wages are concerned, the expected return to education in terms of life-cycle wages significantly affects educational decisions, whereas the level of expected wages proves insignificant." (Lauer, 2002, p. 184).

The risk of being unemployed greatly impacts the young generation and creates an incentive to pursue higher education in order to increase chances of being employed, even if eventually being employed as part-time or low-paid. Apparently, some economic power is better than none in a materialistic world of economic survival. Furthermore, Menon's (1998) research findings show that secondary school students in Cyprus were influenced by their parents' willingness to invest on their tertiary education. Additionally, their parents' positive perception of further education which could offer economic benefits to them, as well as family funds assisted the students' choice of HEI. Also, financial aid and scholarships from private universities act as an additional aid for students. Both Lauer (2002) and Menon (1998) mention the significance of how future employment and pay have an impact on students' choice of a HEI.

In addition, Jebaraj Benjamin et al. (2011) examined the financial affordability of private tertiary education for households in Malaysia. Seemingly, lower income level families who wished for further education in private institutions could not afford it. This highlights the influential economic factor and the hot pending issue for some governments and their power over private education.

Like Jebaraj Benjamin et al. (2011), Li-Ping Tang et al. (2004) also researched the factors related to college tuition at private HEIs. Findings lead to the fact that well off students and parents could invest on highly reputable universities and, thus, acquire and enjoy the return on investment in the future. In like manner, Judge et al. (1995) emphasise that HEIs of the best academic reputation rankings might require a higher charge on tuition fees compared to other HEIs either public or private due to their prestige and high quality. Economic power of students could, thus, influence choice of prestigious, reputable HEIs.

Furthermore, Boggess (1998) stated that family, more specifically growing up with divorced, separated or step-parents, appears to have an adverse effect on a child's chance of graduating from high school and as a result for attaining further education due to insufficient economical resources.

Based on the above studies, parents' economic power or willingness to invest on their children's tertiary education, as well as students' future employability and pay impact the decision of students' choice of a HEI.

2.2.4. The impact of social factor on students' choice of a HEI

Is the social factor an essential influential aspect on students' decision-making for HEIs? Bayırbağ (2013) found that stu-

dents' decision for higher education is critical and in the case of Turkey, it does not depend on them neither on their family. It is rather determined by the results of a very competitive nationwide university entrance examination held once a year by the ÖSYM (Ölçme, Seçme ve Yerleştirme Merkezi - the Centre for Measurement, Selection and Placement).

On the contrary, Pimpa (2003) who analysed the influence of family on Thai students regarding international education found that family members can be a crucial push factor in their decision-making. Many students were convinced on choosing a HEI and/or country by family (parents and siblings) and other relatives living abroad such as in Australia.

Similarly, Bansal and Voyer (2000) indicate that recommendations and opinions of friends and family influence the decision of a student. This makes sense as there is a tendency for personal sources to be more believable rather than non-personal sources, for example paid advertising.

The social factor, in most cases, was influential as to where to go for further education.

2.2.5. The impact of HEIs' location on students' choice of a HEI

Reketye and Pozsgai (2015) emphasise that one of the most essentially differentiating, competitive feature of a HEI is its location. Similarly, Chapleo (2010) adds that location can be an important element in many successful brands in spite of the fact that this was not recognised as such across all HEIs. In particular, the city/town that HEIs are located in can be part of the Institution's brand and can greatly influence the students' decision-making for a HEI. Therefore, location could be part of a branding strategy of a HEI. Based on the development of a Model of Student College Choice by Chapman (1981), location is included in the three major external influences.

Insch and Sun (2013, p. 179) specified that "university and college cities benefit from their highly educated, youthful populations, with greater diversity and cosmopolitanism than non-University cities of similar size and location". Hence, HEIs can give lots of advantages in the city where they are located at because of the students' choice of tertiary education institution. However, this study did not clearly mention how HEIs' location can influence the choice of students, even though we can assume that the benefits received by the college/university city could enhance the brand image and popularity of the city and in parallel of the HEIs there, attracting more potential students.

Additionally, a study by Khan (2014) on the 7Ps of the marketing mix (Product, Price, Place, Promotion, Personnel, Process and Physical evidence) indicate that the marketing mix and particularly, Place, city location of the HEI, can have an effect on student's choice.

Location, thus, based on existing literature can have a direct or indirect influence on the HEI choice.

2.2.6. The impact of programs offered on students' choice of HEI

A study by Watjatrakul (2014) revealed that students seek for quality education. Subsequently, students are looking for essential sources of information that will help their search for that type of education. Moreover, the student-as-customer concept is mentioned reflecting the treatment of a potential

student as a customer in order to meet his/her current and changing needs, wants and expectations. HEIs should be concerned with this concept because it can be one of the factors that guide students' choice. Students do not desire to be at a university which is acting as a service producer with profitability as the main aim. For this reason, HEIs should try to improve their quality of service, the relationships between students and lecturers and generally they should try to make any necessary changes needed to achieve satisfaction of the needs of potential students.

Moreover, Sidin et al. (2003) found six factors to be of importance to students' decision-making related to a HEI; program issues, such as availability of several course options and specialist programs. Also, academic reputation, physical aspects, career opportunities, geographical location (of institution) and time (i.e. duration of studies) were influential. It is remarkable that availability of programs was one of the most important factors influencing the potential students.

Due to insufficient evidence, further research is required to further investigate the factor of programs offered as an influential one to the students.

2.3. Research Gap

Careful examination of the existing literature lead to the realisation that factors influencing the choice of a HEI by students were not adequately examined in Cyprus. Evaluation of the marketing practices applied by Cyprus' HEIs is also inadequate. Cyprus' strategic geographical position can undoubtedly establish it as an educational hub making the establishment and competitiveness of its HEIs in the international market even more vital. Therefore, for the effective development of the tertiary education institutions in Cyprus it is of paramount importance to carefully study the factors that influence students' decision in selecting a specific HEI.

3. RESEARCH METHODOLOGY

3.1. Research Paradigm

This research followed positivistic and phenomenological paradigms through quantitative and qualitative approaches respectively. The positivistic paradigm was chosen in order to enable the collection of data from a representative enough sample of Cypriot students and produce objective results via statistical analysis. Whereas the phenomenological paradigm was also used in order to collect qualitative, subjective data and obtain perceptions, behaviours and beliefs related to marketing practices of a representative sample of HEIs, private and public colleges and universities in Cyprus. Both paradigms were useful in order to aggregate the data collection and achieve the main aim and objectives of the study.

3.2. Sampling and Data Collection Methods

Previous studies such as Bonnema and Van der Waldt (2008) and Petruzzellis and Romanazzi (2010) used questionnaires in order to obtain the reasons for students' choice of HEIs. Nevertheless, interviews need to be conducted to examine the ways in which marketing managers or owners of HEIs use marketing practices to inform undergraduate students.

3.2.1. Questionnaires

This study used secondary data from the Statistical Service of Cyprus in order to help determine the sample size. Based on the latest statistics and through some mathematical procedures the population was found. Thus, by using the Sample Size Calculator through Survey System, the representative sample size needed was one hundred and ninety six (196).

Below are the two Sample Size formulas for known and unknown population, correspondingly, that are involved in the Survey System in order to calculate the Sample Size.

Sample Size

$$ss = \frac{z^2(p)(p-1)}{C^2} \quad (1)$$

Where: Z = Z value (e.g. 1.96 for 95% confidence level), p = percentage picking a choice, expressed as decimal, c = confidence interval (e.g., .04 = ±4).

Correction for Finite Population

$$newss = \frac{ss}{1 + \frac{ss-1}{pop}} \quad (2)$$

Where: pop = population

Since the population is finite, the Survey System calculation uses the second sample size formula. In particular, the sample size number arises by the determination of the following three elements in the Sample Size calculator; confidence level: 95%, confidence interval: 7 (±7) and the known population: 162.514. The fact that this research focuses Pancyprian in the major five cities; (Famagusta, Larnaca, Limassol, Nicosia and Paphos) the sample size was distributed proportionally in each of the five cities through stratified random sampling. The calculations showed that Nicosia required seventy eight (78) participants (students of HEIs); Famagusta: ten (10), Larnaca: thirty three (33), Limassol: fifty five (55) and Paphos: twenty (20). The questionnaires were distributed to the participants randomly, mostly face to face, inside cafeterias and shopping malls where students frequently hang out. Moreover, an online version of the questionnaire was also available for faster data collection. The questionnaire had an English and a Greek version since the sample size of this study addressed to Cypriot students and the majority wanted to complete the questionnaire in Greek. Each question of the questionnaire was generated in order to assist the examination of the main objectives. The feedback of the questionnaires was analysed via IBM®SPSS®Statistics software (SPSS). SPSS simplified the process of data analysis by coding each variable and running descriptive and inferential statistics to get a greater insight into the data through frequency tables, chi-square tests and cross-tabulations.

3.2.2. Interviews

Six, semi-structured interviews with managers of HEIs were conducted, considering similar, previous studies like Moogan (2011) as well as the small population of HEIs in Cyprus. The interviews conducted were face to face in order to grasp and evaluate any gestures, verbal or nonverbal reactions, attitudes and behaviour.

The sample of interviewees (Table 1) consisted of five private HEIs (two colleges and three private universities) and one

TABLE 1
INTERVIEWEE SAMPLE

INTERVIEWEE TITLE	TYPE OF HEI	CITY
Owner	Private college	Larnaca
Manager/Head	Private university	Famagusta
Marketing manager	Private university	Nicosia
Marketing manager	Private college	Nicosia
Head of Communication Office	Public university	Nicosia
Owner	Private university	Nicosia/Limassol

public HEI. The reasons for choosing these particular HEIs were in order to have the opportunity to compare and contrast and finally draw conclusions towards the applied marketing practices of public and private HEIs (universities/colleges). Moreover, four out of the six chosen HEIs are located in Nicosia since it is the capital of Cyprus that has the biggest population. In addition to this, the competition of various HEIs in that particular city is more intensive. It would also be feasible to compare and contrast the marketing practices of a young university with other experienced HEIs either public or private. All the interviews were executed in the HEIs' locations, except one which was implemented externally. Once the data was collected, thematic analysis was followed, coding the data and identifying, extracting and comparing patterns associated with the research objective; marketing practices applied by various types of HEIs and their impact on student's choice of HEI.

4. DATA ANALYSIS AND DISCUSSION OF KEY FINDINGS

4.1. The Impact of Advertising On Students' Choice of a HEI

There is a statistically significant association ($p\text{-value}=0.02$) between the impact of advertising and the chosen type of HEI so it is required to reject the null hypothesis. If students are not at all influenced by advertising, then there is a seventy eight percent (78%) possibility to attend a public university. If the students are slightly influenced or more, then this chance drops significantly to forty two percent (42%), forty nine percent (49%), forty three percent (43%) and thirty six percent (36%) for slightly influential, very influential and extremely influential respectively.

Hence, students who plan to attend a public university do not seem to be affected by advertising since they are certain about their choice. This coincides with the findings of the public university not applying marketing practices for undergraduate degrees. Potential undergraduate students are not influenced by advertising if they know for sure that they can achieve the public university's entrance exam requirement. However, if they want to widen their options of HEIs they will pay greater attention to advertising.

4.1.1. The impact of billboard advertising

It is significant that there is statistical evidence against the null hypothesis ($p\text{-value}=0.024$) between students' exposure to billboard advertising and the type of chosen HEI. It was the only type of advertising that was statistically proven to impact the choice of HEI.

This result contradicts Bansal and Voyer (2000) who found

WOM to be the most dominant advertising type impacting students' decision-making.

Out of the students exposed to billboard advertising, forty five percent (45%) go to a public university, forty eight percent (48%) go to private university and thirteen percent (13%) go to college. On the other hand, if students are not exposed to billboard advertising, there is a sixty one percent (61%) chance that they will attend a public university supporting the aforementioned findings of public vs. private HEI choice.

4.2. The Impact of Economic Factors On Students' Choice of a HEI

The above two variables are perfectly dependent since the $p\text{-value}$ equals to 0.00. Sixty nine percent (69%) of the students who are affected by tuition costs/fees attend a public university. In comparison with private universities and colleges, forty four percent (44%) and seventeen percent (17%), respectively, of the respondents who attend those HEIs are not influenced by tuition costs. This reflects the fact that students are willing to attend public universities due to absence of tuition fees/costs. This finding agrees with existing literature review where the economic factor affects the decision-making of students in regards to their choice of a HEI. As a result, there is a necessity to address the issue of financial affordability mostly in private HEIs by making the cost of academic fees reasonable. More scholarships and financial aid can also be made available to the pool of potential students.

4.2.1. The impact of scholarship offers

There is also a perfect dependency between scholarships offered by HEIs and the choice of a HEI by potential students. Eighty five percent (85%) of respondents who attend a public university have not been impacted by the provision of scholarship offers, whereas forty five percent (45%) and thirty nine percent (39%) of the students, who attend a private university or college, respectively have checked the scholarship offers as one of their influential factors. This finding strengthens the fact that the economic factor and more specifically the affordability of students' further education is an impacting factor in the choice of a HEI (public vs. private).

4.3. The Impact of the Social Factor On Students' Choice of a HEI

The analysis shows that there is no association ($p\text{-value}=0.51$) between the social factor and the choice of HEI. In addition, there is no statistical evidence ($p\text{-value}=0.61$) between the field of study and the social factor (family and friends). This complements this study's finding of advertising and more specifically billboard advertising, as well as the economic factor, as influential to students' choice. Students probably feel the need to make more independent choices on the field of study and the HEI they will attain solely based on information provided by the Institutions.

On the contrary previous research studies specify that family members can be a crucial push factor in the students' decision-making.

TABLE 2
RECOMMENDED ADVERTISING TIPS

ADVERTISING TIP	FREQUENCY OF RESPONSES
Increased number of advertisements on social media (Facebook & Twitter), TV & billboards	41.3%
Reduction of tuition fees	21.4%
Creation of awareness at lyceums regarding HEIs' programs	17.3%
Job finding for HEI graduates	16.8%
Increased number of scholarship offers	14.7%

4.4. The Impact of the HEI's Geographic Location On Students' Choice of a HEI

The geographic location of HEIs and choice of HEI (public university, private university or college) are not dependent variables. The fact that Cyprus is a small island and a city is within a two hour-drive from the furthest city, it is reasonable that location could not be so much of an impacting factor. This disagrees with existing literature where they found that a HEI's location could be a competitive feature (Rekettye and Pozsgai, 2015) and a crucial factor for students' decision-making process (Chapleo, 2010; Insch and Sun, 2013). Geographical distances among cities or states are longer than in Cyprus.

4.5. The Impact of Faculty & Programs Offered On Students' Choice of a HEI

It was observed that sixty five percent (65%) of the students, who are not influenced by the faculty of the HEI, choose to attend public institutions. However, the ones who chose private colleges or universities are influenced by the quality of faculty employed there. Due to the fact that students pay tuition fees to attend private HEIs, they are more conscious about the excellence of faculty and thus the quality of service/education they pay to receive.

The type and variety of programs offered do not seem to impact students' choice of HEIs unlike other researchers who revealed that quality, programmes/degrees offered and variety of programmes (Sidin et al., 2003) are essential components in the decision-making of students. Nonetheless, there is one common agreement between the literature review and the analysis that faculty is a vital influential factor on the decision-making of students.

4.6. Students' Recommendation On How To Make a Hei's Advertising More Attractive To Potential Students

The following, (Table 2) most frequently provided tips were derived through the thematic analysis of the open-ended question of the questionnaire. The respondents who did fill it out suggested:

The students' advertising tips support the study and existing literature's findings on the importance of the economic factor (tuition fees' reduction, scholarship offers and assistance in employment opportunities), as well as the vitality of advertising as such.

4.7. HEI Manager Interview Analysis

Six interviews were conducted to get the HEI representatives' perception on the application of marketing practices. The sample of HEIs was representative enough in terms of covering both public and private, colleges and universities, young and old ones in four cities of Cyprus.

- 2 private HEI's in Famagusta and Larnaca; the one is a young university and the other older college.
- 1 public university in Nicosia.
- 2 private universities in Nicosia and Limassol.
- 1 private college in Nicosia.

4.7.1. Application of marketing practices

All the interviewees mentioned that they apply marketing practices with an exception of the public university that only applies them for its Masters' and PhD programs. These programs are not very popular at the public university of Cyprus, thus advertising is required to make them more competitive. A variety of marketing methods are applied; TV, billboards, radio, flyers, Google ads, online newspapers. The young university interviewee in Larnaca was the only one who mentioned that the application of the 7P's (Product, Place, Price, Promotion, Process, People and Physical Ambiance) is required in order to build awareness for new, potential students. These 7 P's were also mentioned by Khan (2014) who found that the application of the marketing mix would benefit the image of HEIs. Strategic marketing practices for both young and experienced HEIs need to be conducted for informing the potential market.

4.7.2. Most effective media for attracting new students

Half of the interviewees stated that the most effective medium for appealing to potential students is the word of mouth. Based on the literature review, Bansal and Voyer (2000) also found that word of mouth was the most dominant and effective advertising medium in contrast with Hossler et al. (1990) who found TV and radio to be most effective. The interviewee from the young University in Famagusta stated that the HEI's website is more effective with convincing and up-to-date information provided to the interested market. Furthermore, interviewees from private and public universities in Nicosia mentioned that a combination of media is better.

4.7.3. Most competitive media

TV and social media were the constant answers provided by all the interviewees. An interesting finding is the fact that interviewees from the most demanded and preferable private universities, both located in Nicosia argued that TV and billboards are the most competitive media. The reason for that is that their potential absence in the aforementioned media might form consciously or subconsciously negative perceptions of the HEI since the other competitors apply them. As a result, the implementation of marketing practices by private and public HEIs resembles the findings of the literature review. There is a unanimous agreement between this study's

qualitative analysis of HEI representatives and existing literature (Beneke, 2010; Chapleo, 2010; Bunzel, 2007; Belanger et al., 2002) on the importance of marketing practices and strategies to be applied by HEIs for the promotion and information to the potential students.

5. CONCLUSION & RECOMMENDATIONS

There is an undisputed importance of well-established advertising practices, mainly billboard advertising. Billboard advertising is the most impacting on students, especially for private HEIs as they are more competitive in terms of fees and programs. Increased frequency of TV advertising and social media is also recommended by students. In addition, students feel the need to make more independent choices on the type of Institution and the field of study without being influenced by others, family or friends. Therefore, to gather all the necessary information regarding their options, they carry out intensive online research, as well as research through traditional means, such as Institutions' promotional leaflets. Part of the information that students are looking for to receive on advertising material are availability of scholarship offers, affordability of tuition fees and assistance with job search upon graduation; the economic factor is thus, also an influencing one, agreeing with existing literature. They would also like to receive information through a more personal and traditional approach, through informational sessions at lyceums, organized by the HEIs. Advertising media are the means of transmitting valuable information, such as tuition fees and scholarship offers, to the pool of potential students. Advertising helps to make HEIs more competitive and attractive to the pool of potential students. Location of the HEI does not seem to influence the choice of an Institution. Cyprus is a small island and all cities and districts are within short driving distances from each other, thus once all other student needs or demands are satisfied, location will not be of an impact. The social factor, surprisingly enough, does not impact the decision-making of students, as opposed to findings of other researchers. There is, however, a contradiction of perceptions between students and HEI managers as word of mouth is considered the most effective marketing medium by managers in terms of attraction of students to their institutions. Word of mouth could be related to the social factor, as it is through others that the word, either positive or negative, about the HEIs will be transferred. Further research could investigate this more. Word of mouth, however, is the most powerful, cost free way of indirect advertising, so the fact that advertising impacts students in the decision-making for further studies strengthens the power of the factor advertising. For a positive word of mouth to be established, a satisfactory overall service should be offered by the HEIs, especially by private ones. Additionally, there is a high cost for students to pay (tuition fees) in order to attain private HEIs, thus, students demand quality faculty and service. It is important for HEIs to be in closed contact with their target market as they will give them feedback on what they demand to receive from the tertiary institutions. A satisfied pool of prospective students will lead to a satisfied pool of attendees who will in turn become ambassadors of the HEI they are part of and spread positive word of mouth bringing even more students to the same HEI.

6. STUDY LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The sample size consisted of Cypriot students only, whereas it could have consisted of foreign students attending Cyprus' HEIs in order to get a more holistic, well rounded perception of students' impacting factors on their evaluation and choice of a HEI. Different cultural backgrounds could be impacted by different variables. HEIs, in Cyprus and abroad, with international operations, that want to attract a diverse, international pool of students need to know what their potential market is looking for, so that they can promote it accordingly and eventually offer it. The aforementioned could be further researched to enrich this area of topic. Moreover, the contradicting finding between students and managers related to the impacting social factor could also be further researched.

7. IMPORTANCE OF THE STUDY

The scrutiny of university performance and levels of global competition are continuously growing. As universities around the world are trying harder than ever to improve their international standing, Cypriot colleges and universities must keep up with this challenge. It is therefore vital that the students' expectations are highly considered in this process. This study adds to the further understanding of study choices of pre-university students. Acknowledging considerable aspirations and definitive choices of students, one can argue that this study's design brought us closer to investigating real choices. Exploring influential factors of students' choices will guide marketing experts to create relevant advertising campaigns for the Higher Education Institutions. Such an investment will also improve the Institutes' income to maintain excellent teaching and learning levels for students. This study could be a valuable source for owners and marketing managers of HEIs. It is important for them to know that the social factor (family and friends) and location of a HEI do not have an impact in the decision-making process of students. It is important to mention that HEIs need to reduce their tuition costs/fees, especially in eras of economic recession in order to make tertiary education more financially attractive. Based on the findings, HEIs should offer more scholarships, reduce their fees, assist with job finding upon students' graduation, and advertise on billboards, social media and TV. The advertising and the economic factors are the most influential in the students' decision-making for a HEI choice. A well-researched and executed Marketing plan is a required investment by HEIs that will eventually pay off.

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The Social Contribution of Systems Development Towards Breast Cancer Awareness

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Abstract

Purpose: The study aims to raise the level of breast-cancer awareness through the development of a web-based system offering accurate information to the public (including patients, friends and relatives of patients, healthcare specialists, etc.) in relation to the prevention and early diagnosis of breast cancer based on contemporary prevention concepts and cancer treatment. Furthermore, the web-based system features a Check-up Reminder/Urgency Tool which is expected to promote early diagnosis of breast cancer.

Design: Based on knowledge gathered from academic and other resources, the throwaway prototyping systems development methodology was adopted to guide the process of planning, analysing, designing and implementing the suggested web-based application on breast cancer. Given the fact that the selected topic is very sensitive, interviews were considered as the most appropriate method for gathering in-depth and rich information from different groups of informants (healthcare specialists including doctors and nurses, and patients).

Finding: The findings from the interviews were compared and contrasted with knowledge gathered from the studied literature to establish a greater understanding on the studied topic. A key finding of this research study is that risk factors (such as age, gender, smoking and drinking habits) do not always determine the appearance of breast cancer, as commonly assumed. Therefore, breast cancer awareness is of critical importance. Overall, the insights from the interviews helped us craft the content published on the website. Additionally, the interview transcripts were thematically analysed to extract the functional and non-functional requirements which guided the design and development of the breast cancer awareness website. Furthermore, the information that was gathered and analysed has greatly informed the development of the Check-up Reminder/Urgency Tool for breast cancer which is provided as an additional functionality on the breast cancer awareness website.

Implications: The study has health-oriented, social, and scientific implications since it does not simply focus on reproducing the available scientific knowledge put also on providing a practical tool to facilitate the prevention and early diagnosis and treatment of breast cancer.

Originality: The Check-up Reminder/Urgency Tool constitutes an element of originality as it is a novel tool developed specifically for the purposes of this research project and aims to help registered members to remember when they need to book their next medical appointment (i.e. mammography, clinical examination, pap and breast ultrasound tests). Finally, focusing on the social dimension of systems development rather than presenting solely the technological phases of the systems development lifecycle is an instrumental aspect of this study.

Keywords: breast cancer awareness, prevention, treatment, throwaway prototyping, web-based application, web-based tool.

1. INTRODUCTION

Unquestionably, cancer is one of the most serious, persistent, and widely discussed health problems. Over the years scientists and practitioners have identified various forms of cancer, some of which are treatable while others are not. This study focuses specifically on breast cancer which may appear in both men and women independently of their age. Breast cancer is the second most common fatal cancer type among women. This fact has been the central motivation behind the present study. Following a substantial literature survey on the topic – which was essential for appreciating the current status of this type of illnesses both from a medical and social viewpoint – primary data were collected from different stakeholders (two doctors, one nurse and one patient). With this knowledge and understanding at hand, the ultimate aim of the study was to analyse, design and develop a web-based application for promoting breast cancer awareness. Through this website

users can find relevant and practically useful information related to cancer. More specifically, the website endeavours to provide accurate information related to the prevention and early diagnosis of breast cancer based on modern prevention concepts and cancer treatment.

A breast cancer awareness website will be of great significance to patients with breast cancer as well as to other individuals wishing to find more information about how to recognise the symptoms of breast cancer, perform a self-check, or learn about the importance of the early detection of breast cancer. This project aims to make a web-based information system that will help users by providing centralised information about breast cancer including coverage of the latest news in terms of research, medical and technological developments, socially oriented issues concerning breast cancer, the promotion of awareness, available products and services related to breast cancer, and dissemination of information about educa-

tional programs or seminars and upcoming events.

In addition to displaying useful, current, and relevant information towards promoting breast cancer awareness, another important target of the web-based information system is the development of the Check-up Reminder/Urgency Tool. This tool aims at promoting the idea that ‘prevention is better than treatment’ and that being reminded to book an appointment and conduct the required checks and tests on time may substantially contribute to timely breast cancer detection.

The article is structured as follows: Section 2 provides an overview of key concepts and methods related to the study area. Section 3 presents the research and development methodology employed for developing the proposed web-based application followed by a discussion of the main findings and how these informed the design of the system. Finally, the main conclusions and implications are discussed in Section 4.

2. LITERATURE REVIEW

A detailed review of the available literature, as well as of existing similar websites providing medical and general information about breast cancer, was essential for three main reasons: firstly, in order to understand and better appreciate the magnitude of this medical situation and the importance of increasing awareness; secondly, to familiarise oneself with key terminology so as to be in position to conduct interviews and make sense of the data gathered from health-care specialists, patients and other informants; and finally, to form the basis for constructing the content made available on the website developed. The following sections outline the key concepts studied.

2.1. Historical Background

Cancer is considered to be one of the most common diseases in the world and its appearance is dated more than three thousand years B.C. With regards to breast cancer in particular, Egyptians (Mandal, 2013) seem to be amongst the first who attempted to understand and describe it. In 460 B.C. the father of Western Medicine, Hippocrates, referred to breast cancer as a chemical disease. Further, he called cancer ‘karkinos’ (Greek for ‘crabs’), because according to Hippocrates “the tumours seemed to have tentacles, like the legs of a crab” (Rayter and Mansi, n.d.).

In the past, the detection of breast cancer was rare and treatment was even more challenging than today. The 19th century brought about great changes and advances in medicine, including the development of anaesthesia (in 1846) and microscopic pathology. Radical mastectomy was also proposed for reduction of local recurrence rates. Nevertheless, in many cultures, the appearance of breast cancer was – and maybe still is – considered an embarrassing situation. During the 1990s, breast cancer awareness started to gain more attention, and a pink ribbon was created to symbolise this awareness. This action brought about a revolution in the way individuals and societies view and respond to this and other types of cancer. Raising awareness was also related to the promotion of ‘prevention over cure’, as well as to the need of shifting the mind-set of individuals towards more supporting social structures.

Through modern medicine techniques proposed during the mid-twentieth century, women could undergo mastec-

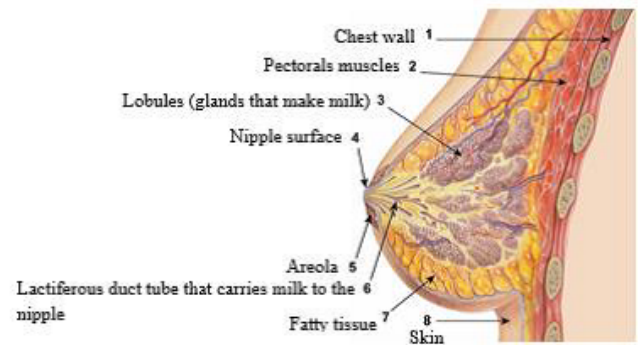


Figure 1: Normal breast anatomy

tomies and other specialised therapies, hormone treatments, surgeries and biological therapies. Mammography was also developed for early detection of cancer (Society, 2014; Rayter and Mansi, n.d.; Mandal, 2013). In recent years, with the help of science and technology the quality of scientific and empirical knowledge about this disease has begun to improve and numerous approaches for breast cancer detection and treatment have been applied. In the 21st century, alongside the continuous developments and advancements in the fields of medicine, science and technology, special attention is also placed on raising individuals’ awareness about breast cancer (in both men and women), and promoting the significance of early detection in the broader context of establishing a healthy lifestyle.

2.2. Breast Cancer: Definition and Risk Factors

When the normal cells begin to multiply in an uncontrolled way in a specific part of the body, then the organism produces abnormal cells (National Cancer Institute, 2014). Breast cancer is an uncontrolled growth of breast cells. Usually breast cancer begins in the cells of the lobules, which are the milk producing glands, or the ducts (Figure 1). If cancer begins in the lobules it is called lobular carcinoma, while in the ducts it is named ductal carcinoma (MedicalNewsToday, 2014). The disease affects mainly women, but men can also be affected.

Several risk factors have been found to play a significant role in causing breast cancer in women. However, this does not mean that presence of these factors will always result in developing the disease. Some of these risk factors are unavoidable by nature such as: gender, age, onset of menstrual periods, genetic risk factors, family and personal history of disease, dense breast tissue, and previous chest radiation (American Cancer Society, 2014; NHS, 2014; Cancer Research UK, 2014). According to the American Cancer Society (2014) and other sources (Orbeck-Nilssen, 2009), due to these factors, being a woman carries the fundamental danger element for having breast cancer, without this meaning that it is impossible for men to acquire it. To be more precise, this condition is considered around 100 times more common among women than men, a fact also based on the grounds that men have less of the female hormones estrogen and progesterone, which can advance breast cancer cell development. As far as age is concerned, the danger for women to suffer from breast cancer increases as they get older. Approximately 1 out of 8 invasive breast cancers are found in women younger than 45; however, this increases dramatically as around 2 out of 3 invasive breast

cancers are found in women aged 55 or older.

Concerning menstrual periods, women who have their first menstruation before the age of 12 and/or experience menopause after the age of 55 have a marginally smaller danger of a breast disease. Family history regarding this disease is also considered a risk factor (Orbeck-Nilssen, 2009). Having a first-degree affinity with an affected person practically increases a woman's level of danger. However, less than 15% of women with breast cancer have a relative with this condition. This implies that 85% of women suffering from breast cancer do not have a family history of this illness (either because historical information is unavailable or because the disease appears even if no prior incident existed in one's close family). In addition, women with growth cancer in one breast have a 3 to 4 fold increased danger of acquiring the disease in the other breast or in a different part of the same breast (Orbeck-Nilssen, 2009; American Cancer Society, 2014).

Another factor that contributes to the development of breast cancer is breast tissue density. Women with dense breast tissue have between 1.2 to 2 times higher danger of developing breast cancer than women with normal breast density. This density can be observed through a mammogram. Furthermore, the danger of creating breast cancer from chest radiation is most elevated if the radiation was received during adolescence when the breasts were still in developing stages. Radiation treatment after the age of 40 does not appear to increase breast cancer hazard (American Cancer Society, 2014).

With regards to genetic risk factors, around 5% to 10% of breast cancer cases are thought to be innate, implying that they stem from gene defects (called mutations) inherited from parents. The most well-known reason for inherited breast malignancy is an inherited mutation in the BRCA1 and BRCA2 genes. Genetic testing takes place to search for changes in the BRCA1 and BRCA2 genes (American Cancer Society, 2014).

Additional risk factors relate to personal behaviour or lifestyle characteristics such as alcohol consumption, being overweight or obese, the absence or degree of physical activity, the age at which a woman has her first pregnancy, and breast-feeding amongst others. More precisely, women who do not have babies or who have their first child after the age of 30 have a marginally higher breast cancer hazard. Conversely, having numerous pregnancies and being pregnant for the first time before the age of 30 decreases the hazard for breast cancer growth. On the subject of consumption of alcohol the risk of developing cancer is a function of the amount of alcohol consumed. Women who consume two to five alcoholic drinks daily have around 1.5 times the danger compared to individuals who do not drink or consume only 1 alcoholic drink per day. With regards to breast-feeding, a few studies propose that breast-feeding may somewhat lower breast cancer hazard, particularly in the event that it is proceeded for 1.5 to 2 years. This is related to the fact that breastfeeding diminishes a woman's aggregate number of lifetime menstrual cycles (American Cancer Society, 2014). Being overweight or obese (after menopause) has also been found to increase breast cancer hazard. Likewise, women who are overweight have a tendency to have higher blood insulin levels, a fact which has been connected to certain diseases, including breast cancer (Morimoto et al., 2002; Society, 2014). Physical activity also plays a significant role and studies have suggested that exercising decreases the breast cancer hazard. Indeed, the American Cancer Society (2014) proposes that adults must make no less than 150 minutes of moderate intensity or 75 minutes of

energetic intensity activity every week.

The literature also suggests additional categories of risks with unclear effects on breast cancer risk, such as a person's diet and vitamin intake, chemicals in the environment, smoking and night work. Several studies have observed that breast disease is less common when one's diet is low in fat (both polyunsaturated and saturated fat). Additionally, in recent years, studies have discovered that long term smoking is connected to a higher danger of breast malignancy. The danger is most noteworthy in women who began smoking before they had their first baby. Second-hand smoking also may increase the risk. As for working overnight, a few studies have mentioned that women who work during the evening may have an expanded danger of suffering from breast cancer, because of changes in the levels of melatonin, a hormone whose production is influenced by exposure to light (American Cancer Society, 2014).

Despite the extensive research which has contributed in better understanding the risks and habits associated with cancer, there is a paradox with regards to the risk factors outlined in this section. On the one hand, presence of any one or even all of these factors may not necessarily mean that the person will have the disease. On the other hand, cases have been reported where women who satisfy none of the aforementioned risk factors have presented symptoms of cancer (American Cancer Society, 2014). This paradox increases the significance of promoting awareness in this area.

2.3. Breast Cancer Prevention and Treatment

The detection of breast cancer at an early stage is critical in order to focus on the treatment of the disease at an early stage. Several methods have been proposed, which can be used in conjunction with each other.

A basic detection technique for breast cancer involves *Breast Self-Examination (BSE)*, a method that helps women check their breasts for any lumps or changes. The age of 20 has been proposed as appropriate to start performing BSE on a regular, monthly basis (WebMD, 2014). Women with menstrual cycle should ideally perform the examination a few days after the end of that period because then a woman's breasts are not tender or lumpy (eMedicineHealth, 2014). Several common self-examination patterns have been designed to ensure complete breast coverage (i.e. Up and Down Lines, Wedges and Circles) and every female should familiarise herself with these techniques. Special attention should also be given to identifying apparent changes in the size or shape of breasts, skin dimpling, swelling or discoloration of the skin, in which case medical advice should be sought.

A *Clinical Breast Examination (CBE)* is the physical examination of the breast in a medical centre or hospital by a professional doctor. Such screening tests can help to diagnose the disease early, when it is easier to treat. This may, in many cases, save lives (Susan G. Komen, 2014). It has to be noted that clinical breast examination is used alongside mammograms to check women for breast cancer (Orbeck-Nilssen, 2009). Indeed, in recent years, technology has allowed for more accurate breast cancer detection methods such as mammography. *Mammography* is the most common diagnostic technique for the early detection of breast cancer for the reason that it can detect cancer cells at an early stage. Mammography uses X-rays (Figure 2) to create an image of the breast (called a mammogram). In turn, by using Computer Aided Diagnosis (CAD)

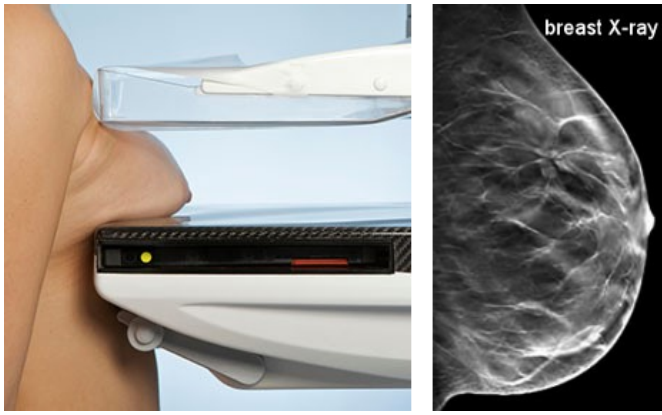


Figure 2: Mammography

radiologists can dissect the mammographic pictures and try to detect an anomaly on a mammogram. This technique permits detection earlier than other typical screening programs. Following this stage, if any anomaly/ mutation is detected, the radiologist will normally recommend a biopsy or Tissue Sampling (Orbeck-Nilssen, 2009), which is “the removal of a sample of tissue or cells so that they can be examined by a pathologist, usually under a microscope” (Nordqvist, 2017).

Magnetic Resonance Imaging (MRI) (see Figure 2) is another helpful medical diagnosis instrument providing clear pictures of the body’s inside obtained in a safe and non-intrusive way (Nacher, 2008). Specialists have advised that MRI ought not to be viewed as a substitute for standard mammography, but the two methods should be used in conjunction [26] especially in the case of high risk individuals (Orbeck-Nilssen, 2009).

In addition to the screening techniques, preventive mastectomy or surgical prevention of breast cancer may be applied. *Mastectomy* is a surgical method involving the removal of one or both breasts so that the risk of breast cancer is reduced for moderate to high risk women in order to forestall malignancy. This method diminishes the danger of having breast cancer by 90% in high risk people (Orbeck-Nilssen, 2009).

Every year millions of people are diagnosed with cancer and come across the challenge of deciding on a course of treatment and care. Multi-disciplinary cancer conferences are organised to deal with these issues. Medical centres bring together hybrid medical teams of cancer specialists (including physicians, medical oncologists, radiation oncologists, surgical oncologists, care-managers and oncology nurses, as well as psychologists and other specialists) in order to examine and analyse the type of malignancy, discuss and decide the method (or combination of methods) which will be applied, and formulate a course of action (Cleveland Clinic, 2009). The composition of the cancer care team is very crucial as numerous specialists must work together efficiently, effectively, and professionally to prevent, diagnose, and treat breast cancer while in parallel support the patient psychologically.

3. RESEARCH METHODOLOGY

3.1. Selected SDLC Methodology

In response to the main ideas gathered from the studied literature it was essential to choose an appropriate systems development lifecycle (SDLC) methodology to implement the pro-

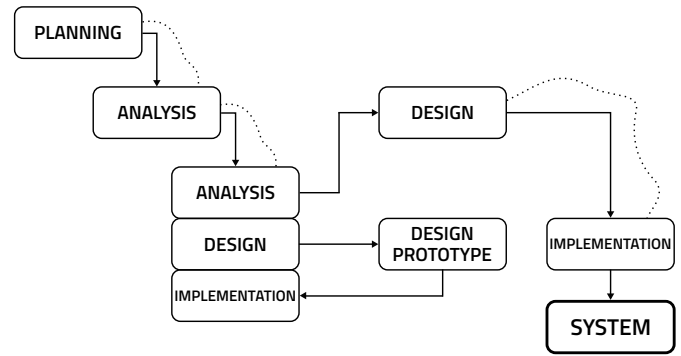


Figure 3: Throwaway Prototyping

posed web-based system. The Throwaway Prototyping systems development methodology (Figure 3) was adopted to guide the process of planning, analysing, designing and implementing the suggested web-based application on breast cancer.

Choosing an appropriate SDLC methodology is not a straightforward task (Dennis et al., 2008). Given the fact that there is no other similar system available and user requirements are unclear, throwaway prototyping is normally more suitable compared to alternative SDLC methodologies (such as waterfall) as it delivers various prototypes to users and allows them to interact with an early version of the system. This approach helps delineating users’ requirements and expectations from the system and permits obtaining feedback and making changes early on. Additionally, delivering various design prototypes allows identification of potential problems and/or risks before building the actual system. Consequently, this methodology is considered cost effective and time efficient compared to alternative options. Finally, the chosen methodology is suitable when system accuracy is a high priority, as in the case of the proposed web-based system, which deals with a sensitive, medical/social issue. Special attention is therefore given to iterative and incremental improvement, and testing takes place throughout the life of the project. This approach is essential for generating a high quality product that is fit for addressing users’ needs.

During the Planning phase, the focus of the project was delineated and project planning and scheduling was established amongst all involved parties. Additionally, the target audience was identified and the project’s main aim and objectives were confirmed. Specific objectives included the need to create a space where interested individuals could access information easily, at any time, and from any place. In order to satisfy these requirements the decision was taken to build a web-based system. The proposed website will portray information in various formats including text, hypertext, and graphical representations (i.e. images, photographs, etc.) in an easy-to-read format to ensure accessibility of the published content.

The Analysis phase focused on who will use the system, what the system will do, and where and when it will be used. Given the sensitive nature of the selected topic, interviews were employed for primary data gathering and analysis. Rich, in-depth insights were gathered from different groups of informants including healthcare specialists, two doctors and a nurse, as well as a patient. Interviews were recorded (with the consent of the participants) and the gathered data was fully transcribed and qualitatively analysed using thematic analy-

sis. Overall, the insights from the interviews helped craft the content published on the website. Additionally, the functional and non-functional requirements were extracted and these informed the subsequent phases.

The aim of the Design phase was to specify how the system will function and design the user interface, forms, databases, and files that will be needed. Numerous tasks were undertaken during this phase including the preparation and organisation of the informational content, logo design, decisions on formation options such as background colours, and menu/navigation design, amongst others. On-going feedback, comments, and suggestions were sought from informants resulting in various iterations and prototypes until the final system design was agreed. Furthermore, the information that was gathered and analysed has greatly informed the development of the Check-up Reminder/Urgency Tool for breast cancer which is provided as an additional functionality on the breast cancer awareness website.

Lastly, the final system was developed during the Implementation Phase featuring the required content, functionality and navigation mechanisms according to specification.

3.2. Requirements Gathering

The selection of data gathering methods depends on the focus of the study, the participants involved, the nature of the technique, and the resources available (Rogers et al., 2011). Given the constrained accessibility to informants (i.e. healthcare specialists and patients) alongside the fact that the nature of the selected topic is very sensitive, interviews were considered as the most appropriate method for gathering in-depth and rich insights. Although it was challenging to identify participants, data gathering is a significant part of any kind of research study for establishing the initial user requirements as well as for evaluating intermediate system prototypes by capturing potential users' insights, reactions, expectations and preferences. Interviews were conducted with healthcare specialists, including two doctors (an anaesthesiologist and a general surgeon) and a nurse, as well as a patient. All interviews were recorded and fully transcribed to allow for thematic analysis. Additional, secondary data was collected from auxiliary sources including online forums and the official website of PASYKAF – a national, non-profit organisation supporting cancer patients and their friends in Cyprus.

3.3. Thematic Analysis

Rogers et al. (2011, p. 269) suggest that “the kind of analysis that can be performed on a set of data will be influenced by the goals identified at the outset, and the data actually gathered”. In the context of the current project, the data and insights collected are expected to inform both the design of the proposed web-based system and the content to be published on the website. In order to extract the set of functional and non-functional requirements which the web-based application needs to satisfy, the transcribed interviews were thematically analysed. Thematic analysis initially involved colour-coding of key concepts and assigning meaningful descriptive terms to each code. Subsequently, common codes (and related verbatim quotes) from separate interviews were collated and joined into related themes. In turn, various inter-related themes were grouped together to form thematic categories, and the most prominent ones to be further analysed

were identified. The key thematic categories identified include: cancer formation; symptoms; inheritance; common risk factors; lifestyle factors and misconceptions; detection techniques; treatment techniques; impact of cancer; breast cancer during pregnancy; associations between different types of cancer; awareness and prevention.

3.4. Discussion of Key Findings

The extracted findings reflect the relevance and significance of certain pieces of information and have thus helped craft the content to be published on the web-based system. In light of the extracted knowledge, it has been made possible to ensure that the web-content corresponds to users' expectations and interests, a crucial element in rendering the proposed web-based system successful.

A key finding of this research study is that risk factors (such as age, gender, smoking and drinking habits) do not always determine the appearance of breast cancer, as most people commonly believe. Therefore, breast cancer awareness is of critical importance and knowledge sharing on this issue should be enhanced.

According to the literature, the most critical age for breast cancer in women is around the age of 50-65. Nevertheless, based on insights gathered from the three healthcare specialists, there are increasingly cases in which breast cancer appears in women of a younger age, between 35-50 years old, and even in women of an older age, after the age of 80. With reference to whether cancer is genetically inherited, the findings were inconclusive emphasising the need to promote awareness, prevention, and arrange the necessary tests regularly.

The best diagnostic techniques of breast cancer screening tests currently used for early detection of breast cancer include: mammogram breast self-examination, clinical examination, ultrasound and MRI scanning. The latter is a technique used in severe or complicated situations. When the ultrasound and mammogram techniques are combined with the physical examination, the diagnosis can be more precise and the rate of data results is approximately 98-99%. Nevertheless, women with dense breast glands should arrange a mammography and breast ultrasound regularly as it is more difficult for these women to feel something unusual in the breast early on. If cancer is diagnosed, the most common techniques for cancer treatment are chemotherapy, radiotherapy and surgery, depending on the stage of the cancer, the age, the medical history of the patient and other contributing and/or constraining factors.

With regards to awareness and prevention, it has been suggested by the study participants that every woman after the age of 35 should arrange a mammography once a year. It was also proposed that self-examination, at least once a month, is equally critical in order to identify any changes in the breasts (WebMD, 2014). Self-examination using palpation methods may start from the early age of 20.

An important pattern identified when analysing both the literature and the interview data, is the importance of systematic repetition or iteration of preventive methods. This observation has ignited the idea to develop the Check-up Reminder/Urgency Tool for breast cancer which is provided as an additional functionality on the breast cancer awareness website. The main goal of the tool is to act as a reminder for every test appointment (breast ultrasound, mammogra-

TABLE 1
FUNCTIONAL REQUIREMENTS

Process-oriented (i.e. the processes the system must perform)	Characteristics	Information-oriented requirements (i.e. information the system must contain)
The system must allow users to login on the website.		The system should contain information about breast cancer treatment and diagnosis methods.
The system must allow registered users to review their profile history.		The system should include clear guidelines for self-examination with auxiliary images.
The system should provide a Check-up Reminder/Urgency Tool which users will be able to use after registering on the website.		The system should discuss stress, psychological, and social aspects related with prevention, diagnosis, and treatment of breast cancer.
The system shall be able to store the registered users' personal data.		The system should promote the importance of awareness, prevention, and self-examination.
The system must remain up-to-date and include valid information.		The information should be formally presented clearly organised.

TABLE 2
NON-FUNCTIONAL REQUIREMENTS

Operational	Performance	Security	Cultural & Political
The system should connect to the database automatically.	The system should be available to access 24/7.	Only registered members may see their personal history and private information.	The website content will use the Greek language.
The system shall ensure that the Check-up Reminder/Urgency Tool functions and efficiently.	The system (including the tool) should be efficient and respond within 2 seconds.	The use of the tool should be restricted to registered users.	
The system should be able to run on any modern Web browser e.g. Google Chrome, Mozilla Firefox, etc.		Users' personal information is protected in compliance with the European Data Protection Act.	
		The system should not request sensitive medical information.	
		The system should be reliable.	

phy, clinical breast examination, and pap tests) based on the date on which the previous test was performed (if any). One month prior to the corresponding test registered users will be notified via email, ensuring that they do not miss or delay the arrangement of an appointment.

Overall, the findings have informed both the content to be published on the breast cancer awareness website and the actual design of the web-based system, including the tool.

3.5. Functional and Non-functional Requirements

To proceed with the design and implementation of the actual system, key findings were formulated into functional requirements (Table 1) and non-functional requirements (Table 2). The former are centred on the system content and functionality, that is, what the system must do, whereas the latter focus on the system's quality characteristics.

3.6. Design and Implementation

Three major design prototypes were developed and evaluated with potential users and experts with regards to layout, navigation design, and overall design. Human-computer interaction principles were considered in all variations of the system design prototypes. The input from user and expert evaluation subsequently led into the final system which was developed using HTML, CSS, and PHP. The on-going testing and evaluation during both the design and implementation phases, along with the close involvement of potential users helped to ensure that the final system is effective, usable, and user-friendly.

The following figures (Figures 4-7) demonstrate the Home Page and Check-up Reminder/Urgency Tool.



Figure 4: Home page

4. CONCLUSION

The web-based system on breast cancer awareness aims to provide accurate information to the public (including patients, friends and relatives of patients, healthcare specialists, etc.) associated to the prevention and early diagnosis of breast cancer based on modern prevention concepts and cancer treatment methods. The information that was gathered and analysed has greatly informed the development of the Check-up Reminder/Urgency Tool for breast cancer, which is provided as an additional functionality on the breast cancer awareness website. As a result, the breast cancer awareness website aims to increase visitors' awareness on the prevention and early di-

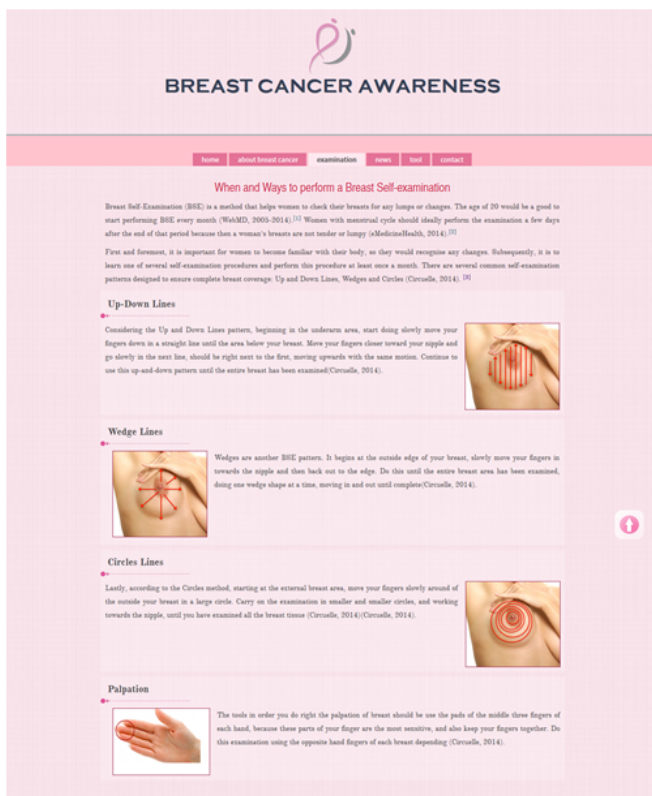


Figure 5: Breast self-examination page



Figure 6: News page

agnosis of breast cancer. In this attempt the proposed system illustrates the social dimension of technology and how system development can contribute in promoting awareness and social change.

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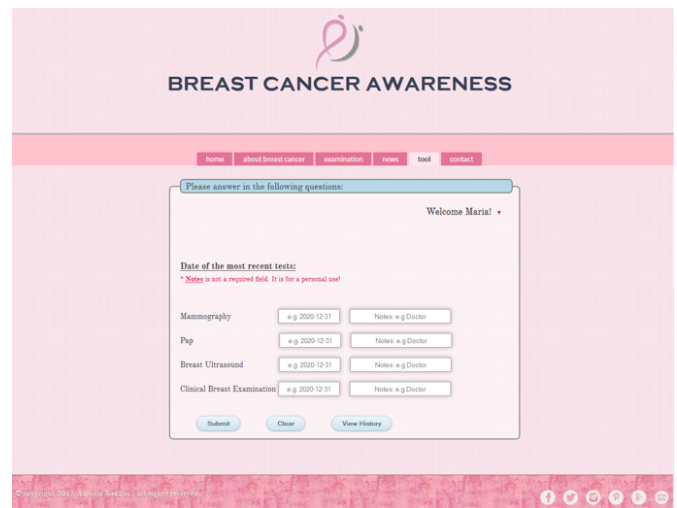


Figure 7: Check-up reminder/urgency tool

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The Effects of Mobility Programs for Professional Accountants on their Employing Accountancy Firm in Cyprus

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Abstract

Purpose: This study examines and analyses the effects of the mobility of professional accountants on their employing accountancy firm with a global network in Cyprus. Particularly, the study focuses on the impact on the firm caused by: the skills and professional competences that the individuals can develop through a secondment; the increase of the quality of their work; the effect on their job satisfaction and loyalty to the firm; and the risk to the resources of the firm associated with the possibility of some employees participating in such a program not returning back to the firm in Cyprus.

Design: An interpretistic approach is adopted based on qualitative data collected through semistructured interviews. The snowball sampling method was used for data gathering followed by the content analysis model and general analytical procedures.

Finding: The study findings suggest that accountancy firms can benefit from the participation of their employees in a mobility program in a number of ways. Firstly, employees develop a set of skills and competences and can increase the quality of their work which is vital for accountancy firms. Secondly, the firm's approach/attitude towards mobility programs has a huge impact on employees' job satisfaction and their decision on whether to return to the firm upon the completion of their secondment. Last but not least, despite the high costs and risks embedded in such programs, the positive impact the firm may have makes the effort worthwhile.

Implications: The findings have implications for accountancy firms with regards to the satisfaction and the professional development of their employees, and the quality of services offered to their clients.

Originality: This study extends the existing knowledge on the topic of mobility programs. No previous study was identified during the review of the literature providing information on the effects of mobility programs on the accountancy firms with global network in Cyprus.

Keywords: Accountancy firms, employee turnover, mobility, quality of work, secondment, skills development, job satisfaction.

1. INTRODUCTION

Accounting firms, have a vital impact in the modern business environment. Key stakeholders are more concerned than ever about the quality of the services these firms provide including accounting, auditing, taxation, advisory and compliance. Additionally, there is a great need of an independent view on company's activities and transactions. Therefore the role and continuous development of professional accountants is essential. The necessity of obtaining an appropriate and trustworthy opinion on the financial information available to the public, irrespectively to the service provided, has enhanced the industry of professional services throughout the world, creating a strong competition between the so called accountancy firms. This high competition in combination with the importance of the professional services that are provided, constantly increase the need for high quality public practising accountancy services.

The main aim of this study is to examine the effects of the mobility of professional accountants on their employing accountancy firm, in the context of Cyprus and, in turn, to extract practical implications towards improving the quality of services offered by the firms, their employees' professional development, and their clients' satisfaction. Particularly, the study attempts to explore the professional competences developed by a professional accountant through a secondment; analyse the importance of the competences that can be de-

veloped by an individual through a mobility program for the sending firm, upon his/her return; identify the impact of the mobility program on the job satisfaction and commitment of the participant; analyse the benefits of job satisfaction and commitment of an individual for the employing firm; analyse the effect of international experience on the quality of the work performed by the practitioners; and explore potential threats in the resources of the accountancy firm through promoting mobility.

The article is structured as follows: Section 2 provides the background and literature review. Section 3 outlines the research methodology employed, followed by a discussion of the findings extracted from data analysis in Section 4. Finally, Section 5 discusses the implications drawn from the study findings and provides suggestions for further research.

2. STUDY BACKGROUND AND LITERATURE REVIEW

This section sets the wider geographical and theoretical context of the study, and reviews and compares the findings from previous research studies in the field to provide an understanding on the existing knowledge in regards to the topic and how this study will contribute to the literature by filling a research gap.

2.1. The Case of Cyprus

Like any other country, Cyprus depends financially on the quality of the professional services it provides. Despite its small size, Cyprus has a large number of accountancy firms including the big four (Deloitte, EY, KPMG and PwC) as well as other large multinational accountancy firms and smaller offices. All these organisations create a large competition between them and increase the need for high quality services within Cyprus as well as overseas, since they often have foreign clients. However, due to its size Cyprus may not have organisations of the extent of other larger countries with stronger economies and more competitive markets. As a result, practitioners in Cyprus may lack the opportunities for richer experiences in auditing or providing other non-audit services to large corporations – experience which could be beneficial for both the individual and the firm.

2.2. Theoretical Framework

To open up genuine opportunities for professional accountants to enrich their experiences and develop their skills, accountancy firms – especially the larger ones which have a global presence – may promote mobility opportunities within their organisation overseas. These mobility programs (also known as secondments) involve employees being transferred to the offices of the firm in other countries, within their network, for a specified period of time. However, just as much as this potential could increase the quality of the human resource of the firm, it could have a negative effect on the quantity of its resource on which the firm has already invested a significant amount of money and time. This means that even though secondments may help the participants in gaining useful knowledge and experiences which can be valuable to the employing audit firm, there is a risk of some individuals never returning to the firm, thereby losing employees. Therefore, the present study examines the effects of mobility programs for professional accountants on their employing accountancy firm in Cyprus.

2.3. Literature Review

The emphasis in conducting a review of the available literature was to provide information on the findings of previous researches in regards to the following areas: the implications of mobility programs for the individual and the firm; the effect of a secondment on the learning and the development of the individual participating and the significance for the employer and; the job satisfaction and loyalty experienced by the participants and their importance for the employing organisation.

2.3.1. Mobility programs

Mobility programs have a positive impact on the professional development of the individuals participating. Leadership, team participation and communication skills (Fojt, 1995) are just a few of the competences that can be developed by the individuals, in addition to the lifetime experiences they may have within a multicultural environment (Marinescu, 2008). These programs can have a win-win outcome to all parties related to them; the individual and the sending and hosting firms. Through sharing of knowledge, the participants of such programs can develop new skills which can be ap-

plied in the working environment of the sending firm, upon their return. In addition, the hosting firm may learn from the participant and update its own management skills through the personal experiences and the approach of the seconded individual in various aspects (King, 2003). Especially in the field of professional services and particularly in large, multinational accountancy firms where practitioners are required to communicate and work in a complex and multicultural environment with a global mind-set, international experiences of their members can be highly beneficial (Marinescu, 2008).

According to Choi et al. (2010) there is a significantly positive relationship between the size of the audit office and the quality of the audit and the fees charged to the client. It suggests that this relationship can be analysed based on two axes. The one is related to the “economic dependence perspective” and the other to the “uniform quality perspective”. Focusing on the second perspective, the study supports the findings of Herbig et al. (1994) and Jacoby and Mazursky (1984) who emphasise the importance for multinational corporations and hence the big 4 as well as other large accountancy firms with brand names to maintain the quality of their services “homogenous” regardless of the position or the size of the office. Choi et al. (2010) also pointed out the efforts the large accountancy firms make to maintain that similarity of service quality across all branches. The focus falls on the training, reviewing and standardisation of procedures and techniques. Finally the study mentions the importance of sharing of knowledge and transfers of employees between offices for enriching and ensuring the similarity of audit quality over all offices under the brand name.

Another important element to which mobility programs could be beneficial for the careers of the participants and the sending accountancy firm upon their return is the industry specialisation. Investing in industry specialisation is now a common practice for the large accountancy firms as they understand and value the benefits it can provide to the organisation (Hogan and Jeter, 1999). Through a secondment professional accountants may easier specialise in industries since they can gain experiences on particular fields that might not be as developed in Cyprus as in other countries. Wang et al. (2014) highlight the association between industry specialisation of auditors and the quality and fees of the audit as well as the market share dominance in particular industries. As mentioned earlier, international experiences can enhance industry specialisation which is a factor that clients take seriously into consideration when selecting their auditor and are willing to pay higher fees for that additional knowledge and experience (Cahan et al., 2008). Another interesting approach on specialisation is that accountancy firms invest in specialisation as a mean of differentiating their services from the ones of their competitors to gain competitive advantage (Mayhew and Wilkins, 2003). This supports the findings of Hogan and Jeter (1999) who mentioned that in the previous two decades when the mergers of the large accountancy firms took place, the areas of specialisation of each firm had a strong impact on the completion or collapsing of some mergers. Firms with similar areas of specialisation merged and gained further from the transfer of knowledge. This indicates the importance of this transfer of knowledge within the firms which will be later discussed in this chapter.

2.3.2. *Learning and Development*

In the past, secondments were perceived as a negative stage in an individual's career since they were mostly used as a transitional stage to redundancy dismissals. In the last decades the approach has changed and thus now secondments are being perceived as an innovative form of development of both hard and soft skills (Fojt, 1995). As a result, one could say that secondments can be used as fast paced learning programs for managerial skill development through alternative and more interactive training methods. ***Rolando M Tomasini (2011) refers to these alternative methods as "informal learning".

Informal learning is acquired under an unstructured and experimental learning environment through facing contexts unfamiliar to the participating individuals and requiring them to exercise their competences in new and different environments. This type of learning is responsible for most of the learning acquired in the workplace even when learning was not the prime objective.

The results of Tomasini (2011) complement the study of ***Chion, Lee and Purnomo (2010) which concluded that there is a positive relation between the transfer of training and; the performance and satisfaction of the employees. ***Chion, Lee and Purnomo (2010) define transfer of training as the degree to which the knowledge and skills obtained in the process of training is transferred by the trainee to the job; and support that the higher the transfer of training, the more efficient and satisfied the individual is in the workplace. As a result it is reasonable to assume that the transfer of training is much easier and smoother when the training is made under the scope of informal learning (Tomasini, 2011) (**Chion, Lee and Purnomo, 2010). Since the mobility of employees enhances the effectiveness of informal learning (Tomasini, 2011), we can conclude that a secondment can increase both the efficiency and the satisfaction of the participating individual (***Chion, Lee and Purnomo, 2010).

According to Gordon et al. (2014) who conducted a study researching the effects of studying abroad on the students in business schools, spending at least a semester of their studies abroad is highly beneficial for the students. In addition that study pointed out that most of the challenges of business education are related to globalisation and that gaining experiences overseas could assist in overcoming those challenges.

Concluding, Gordon et al. (2014) suggested that business schools should promote and encourage their students to participate in exchange programs as they are an effective mean of gaining those overseas experiences. Additionally, it showed that graduates who participated in such exchange programs were more likely to be employed by large multinational corporations and had a tendency to have managerial duties on projects abroad. These findings are in line with the results of Marinescu (2008) who resulted that participants of student exchange programs were employed with a higher salary and obtained more managerial positions. This enhances the idea of secondment being beneficial to the employees in terms of learning.

Even though this study aims in analysing the effects of mobility programs within a professional framework and not an educational, since the benefits in both cases are associated with the informal learning mentioned earlier, it is reasonable to be claimed that the outcome in both cases will be similar of not identical, and thus comparable. Pless and Maak (2009) conducted a study on a program developed by a leading big

4 accountancy firm in which the individuals who take place participate in multicultural teams of practitioners of that particular firm and work in collaboration with people from different sectors to help in solving several environmental or social issues. Through this program, the participants get to work and familiarise themselves with diverse stakeholders, thereby sharing experiences with them and learning from them.

Furthermore, the participation in such a program except for providing unique experiences in a working and learning environment, it can act as a force pushing them out of their comfort zone. According to Mustafa (2013), getting out of the comfort zone is an effective method of learning and development. Another study (Thomas, 2008) suggests that it is essential for leaders in order to be effective to have a broad understanding, not limited to the boundaries of their organisation and its comfort zone. It is therefore clear that the participation in such programs can be beneficial to the development of the practitioners into strong and effective leaders.

2.3.3. *Job satisfaction*

A recent study (O'Shea et al., 2014) has shown that, individuals whose approach towards employment is "boundaryless and protean" tend to be more dedicated to their career development. Such individuals are willing to seek for multiple employments in order to achieve their career goals and aspirations rather than enjoying the security of their current job position with limited growth opportunities. As a result, when they do not obtain sustainable job experiences to accelerate their career, they tend to show low commitment to their employing organisation (Briscoe and Finkelstein, 2009). According to O'Shea et al. (2014), when these employees are given the appropriate opportunities for career development they tend to show an increased satisfaction over their jobs. Considering that employees with high career aspirations are valued by organisations we can say that maintaining their satisfaction and loyalty to the organisation are also of high importance for their employer.

Another study (Forstenlechner and Lettice, 2008) focusing on the factors affecting negatively the satisfaction of employees of a leading law firm showed that many young lawyers had the expectation of international secondments or relocations and were dissatisfied to know that such opportunities were not available to the extent they expected. Even though this study does not focus on law firms but rather accountancy firms, it is considered reasonable to assume that law firms, and especially the leading ones, are easily comparable with the large accountancy firms as they share a vast number of qualities such as the structure, the intensive workload and the sector of professional services. Supposing that young employees of a leading law firm tend to have high career goals, the fact that many of them were attracted by a secondment opportunity is not a surprise. The outcome of the lack of secondment opportunities given to the young and aspiring lawyers in the research of Forstenlechner and Lettice (2008) support the findings of Briscoe and Finkelstein (2009) discussed before. As a result of the overall dissatisfaction of the employees, a very big percentage of them did not have the aspiration of becoming a partner in the firm, and many of them considered gaining sufficient experience to seek for a partner position in smaller firms (Forstenlechner and Lettice, 2008) which is evidence of the significant impact of satisfaction on the loyalty and commitment to the firm.

The literature also suggests a positive and significant relationship between the satisfaction and the performance of individuals in the workplace (Siengthai and Pila-Ngarm, 2016). Additionally another research focusing on the relationship between the job satisfaction and job performance of bank employees showed that the employees had an increase in their performance when the management of the bank implemented strategies to increase their motivation and ultimately their satisfaction. Assuming that banks and accountancy firms share a number of qualities, this idea could be applicable in this case as well (Springer, 2011). Sawitri et al. (2016) provide an alternative approach suggesting that job satisfaction does not have an immediate impact on the performance of the employees. It rather affects directly their job commitment and their "organisation citizenship behaviour", which refers to the humanistic nature of individuals in the workplace, for instance performing work beyond their duties. However, it has shown that job satisfaction may affect the performance of employees through that organisation citizenship behaviour it promotes. Even though it suggests that ultimately job satisfaction have a positive impact on the performance, the findings of Sawitri et al. (2016) contrast the other researches in relation to the direct effect of job satisfaction over job performance. Job satisfaction has a direct and strong relation with the individual's commitment to the organisation as well as his/her career (Carmeli and Freund, 2004).

2.4. Research Gap

In reviewing and critically analysing the available literature the focus was on identifying an area of study which is understudied. The observation that there is a limited number of research studies relating to the significance of mobility programs has generated a motivated effort to conduct research in this area. Particularly for the profession of the accountant and the accountancy firms, that provide several professional services for their clients, no study has previously attempted to indicate the reflection of mobility programs to both the individuals and their firms. Interestingly, even though some articles study the implications of secondments on the career of the individuals participating, these were performed in a more generic environment and not specifically for accountants and, in addition, the effects on the employing organisations were often ignored. Considering the fact that those programs are offered by the employing organisations, regardless of the benefits for the future career prospects for the individual, the firm itself should also be in a position to receive value from the programs. This study identified two research gaps and combined them to derive its main aim; the one being the lack of research on the field of the impact of mobility programs on the employer and the other the lack of research on the effects of mobility programs for professional accountants.

3. RESEARCH METHODOLOGY

The following paragraphs present the methods followed for conducting the research and describe the research paradigm, the units of analysis and the methods of collection and analysis of data. Explanations on the reasoning behind every method chosen are also provided in order to justify their selection over alternatives.

3.1. Paradigm and Unit of Analysis

This research follows the interpretivistic paradigm using only primary data in an attempt to gain a rich understanding on the perceptions and beliefs of individuals. The study has two (2) units of analysis: the professional accountants who have participated in mobility programs, and the accountancy firms in Cyprus that provide this kind of opportunities to their employees.

3.2. Sampling and Data Collection Method

Primary data was gathered through semi-structured interviews since, according to the studied literature, interviews are considered as the most appropriate method of collecting non-numerical data. Five interviews were conducted which is considered sufficient and appropriate considering the samples of previous interpretivistic studies as well as the small population. Since the study focuses only in accountancy firms which provide their employees the opportunity to participate in a secondment abroad, the number of firms is limited to the ones that belong to an international network. Upon communication with most of the accountancy firms in Cyprus with a global network, access was denied due to their policies. Since the access to the employees was not permitted by the firms, the snowball sampling method was implemented to locate individuals which had the main characteristics required. This resulted in having sample from five of the leading accountancy firms in Cyprus including all of the big 4 firms. More specifically, the firms represented by the sample were Deloitte, Ernst & Young, Grant Thornton, KPMG and Price Waterhouse Coopers). These firms were represented as at least one of the sending and receiving employment firm of the members of the sample. This means that all members of the sample were sent on a secondment from one of the previously mentioned firms or were employed by one of them upon their return from the secondment. Of course in some occasions the sending and receiving firm was the same; however that was not always the case. All interviews were performed face-to-face with the exception of two which were performed through Skype calls since the participants were not located in Cyprus. The study participants were informed that the research was anonymous and that all the data collected would remain confidential.

Even though the units of analysis were two, the data for both units of analysis and for all variables were collected from the same individuals. This means that during the interviews with the individuals comprising the sample, the data needed for both units of analysis were obtained.

In relation to the first unit of analysis (i.e. professional accountants), the emphasis was on the opinions and perceptions of the individuals in regards to four variables: the generic characteristics of the professional accountants who chose to participate in a mobility program; the competences they have developed through their experience abroad; the effect on the quality of their work through their experience abroad and; the impact their experience had on their job satisfaction and loyalty towards the firm.

Effect on Individual = Characteristics + Competences + Job Satisfaction + Quality

For the second unit of analysis (i.e. accountancy firms) there are four variables involved for this study: the importance of the competences developed by the individuals for the

firm; the significance of job satisfaction and loyalty by the employees for the firm; the importance of high quality of work performed by employees for the firm and; the threat to the resources of the firms arising from mobility programs considering the risk of the individuals never returning to the firm in Cyprus. All the previous variables are dependent to the perceptions and understandings of the individuals who have participated in a mobility program in the past.

Effect on Firm = Competences + Job Satisfaction + Quality + Resources

All members of the sample were individuals who have participated in a mobility program offered by their employer while working in an accountancy firm in Cyprus. There were no restrictions on issues such as whether the individuals returned to the initial employer upon the completion of their secondment contract, or on whether the individuals are still exercising the profession. The sample includes individuals who have returned to their initial employer on time, later and even never. It also involves individuals who are still in the profession and some who are no longer exercising it. This way, the study managed to obtain a broader understanding on the effects of these programs on the firms since it combined the perceptions of individuals who chose different passages after the completion of their contract thereby resulting to different effects for their employer.

3.3. Data Analysis Methods

All the data collected were qualitative and were analysed by a combination of content analysis and general analytical procedures. This means that firstly the interviews were converted into transcripts and then the most appropriate (relevant to the objectives of the study) data were extracted. Then the coding frame took place meaning that the data related to each other were categorised to identify patterns and frequencies. Following this process the results were compared and contrasted with each other and finally the findings were compared with the observations of the literature review and the study derived its conclusions on the overall effect of employee mobility on accountancy firms. Additionally, the answers provided by the sample were analysed separately in depth and information were extracted on specific matters regarding individuals and their perceptions.

4. DATA ANALYSIS AND DISCUSSION OF KEY FINDINGS

A number of variables were considered during data analysis including demographic and other individual characteristics, skills and competences, job satisfaction and commitment, quality of work, and possible threats.

4.1. Individual Characteristics

Considering the demographic and other characteristics of the participants contributed in the process of interpreting the perceptions of the participants and enabled the provision of possible explanations on aspects affecting the rest of the variables. The four characteristics considered were the destination country, the age of the participants at the time of their participation, their motive for engaging in a mobility program, and the length of their secondment.

Beginning with the country of destination, it was observed that almost all the participants chose a country within the EU as their destination, with UK being the most popular choice. The reason for that could be that it is easier to gain permission to work in an EU country.

All members of the sample were in their mid-twenties when they took part in the mobility program. This could be the case because it is easier for people at that age to engage in such a program without failing their family responsibilities.

Considering the motives of the participants varied responses were gathered. Some participants indicated personal reasons such as meeting new cultures; others invoked professional reasons like the acceleration of their career and others noted both. Regardless of their motive, all participants explained that they were satisfied on both personal and professional level, concluding that a secondment could have a positive outcome on both the personality and career of an individual.

Finally, the length of the secondment contracts was reported to be between six months and two years. However in the majority of the cases the participants chose not to return upon the end of their initial contract, extending their employment in the firm in the destination country. The main reasons for that include the working environment and the receipt of a better employment contract in the country abroad, compared with their options in Cyprus at the time.

4.2. Skills and Competences Developed

Individuals participating in mobility programs have identified a number of skills and professional competences developed during their time working abroad, including specialisation, leadership, responsibility and accountability, and communication amongst others. These skills and competences are described next.

Firstly, the majority of participants mentioned that during their time abroad they have obtained a specialisation on a particular industry or sector. Such specialisations tend to be helpful for individuals in their career progression.

Secondly, most participants seem to agree that their leadership and communication skills as well as their responsibility and accountability were enhanced by their experience of working abroad. This is mainly because of the approach of their employer in the duration of their secondment. According to the participants, in the countries they have worked under a secondment contract the management of the firms tended to show more trust to the individuals and constantly provide feedback on their performance instead of performing extensive supervision. At the same time, this holds individuals accountable for their work. The whole approach assists the employees in becoming more responsible for their work which is undoubtedly important for every employer. Additionally, by forcing individuals out of their comfort zone, instead of "cuddling" them, helps them develop their leadership and communication skills through their interaction with their team and clients.

Some other skills and competences mentioned by some participants as areas of improvement were project management, time management and organisation as well as some more technical skills necessary for the conduction of qualitative work, all of which are considered highly important skills. The main reasons for these skills being developed better abroad include the different approach on personnel develop-

ment, as mentioned above, which provides a stronger learning effect, and the size of the clients with whom the participants had to engage. Since Cyprus is a relatively small country with smaller projects and clients, individuals do not get many opportunities to work with large, multinational companies as their clients. Given the opportunity of a secondment, the employees of the accountancy firms in Cyprus can work on large-scale projects, with larger clients, and hence gain unique working experiences.

4.3. Job Satisfaction and Commitment

Job satisfaction and commitment is an important element for secondment participants when deciding whether to return back to Cyprus upon the completion of their secondment contract. The job satisfaction of all individuals was affected by the fact that their employer allowed them to participate on a secondment mobility program. The participants explained that if they were not allowed to take part in the program it would have had a significantly negative effect on their job satisfaction and could even make them leave the firm to pursue the opportunity themselves. In all cases where individuals were dissatisfied by the firm's approach regarding their application for mobility, they chose not to return to the firm in Cyprus. On the other hand, all employees who were assisted and encouraged by their firm to participate in the program returned upon completion of their secondment contract or soon after that.

4.4. Quality of Work

High quality of work is essential for accountancy firms. Mobility programs can make an impact on the participant's quality of work which reflects on the quality of the work performed by the employees of the firm once they return from their secondment.

All individuals experienced an increase in the quality of their work and those who returned to Cyprus after their secondment observed an improvement in their performance evaluations by the firm. The reasons for this are similar to the reasons of obtaining and developing professional skills and competences. That is, the exposure to larger clients and projects, as well as the employer's approach and methods of personnel development. Additionally, all study participants who returned to Cyprus were promoted by their employer or obtained a job in another firm with a promotion easily. This fact, in combination with the increase in the quality of work and the improvement of performance evaluations, demonstrates that firms highly value quality.

4.5. Threat To Human Resources

Further to the positive effects mobility can have on the human resources of an accountancy firm, there is also the threat of the participants not returning to Cyprus after the end of their secondment contract.

Through the analysis of the data collected it was found that this particular risk is significantly high. This was justified either through the participants' personal experience or through the observations of other participants. One possible explanation for this situation could be that the individuals who decide to engage in mobility opportunities are ambitious and attracted to larger markets and once they experi-

ence working there they are less interested to the market of Cyprus.

Despite the high risk to the resources of accountancy firms, all participants agreed that it is beneficial for the firm to send its employees on a secondment due to three main reasons. Firstly, accountancy firms are reported to have a high employee turnover ratio, especially for younger employees who are more likely to pursue a mobility program. This means that even if the individuals chose not to return, the dependency on those employees is very low. On the other hand, if the individual returns, then the firm can benefit from their knowledge and experience. The second explanation was that if the firm adopts a culture that promotes mobility and actively presents its appreciation to the qualities earned, this will enhance the returning of those individuals to the firm in Cyprus. Furthermore, it will enable the firm to take advantage of the skills and competences mentioned earlier more frequently. The third reason suggests that even if the participants choose not to return, sending employees on secondments can still be beneficial for the firm in Cyprus. This is because the firm may develop a network with the firm in the country where those individuals decide to continue their career.

Considering these three concepts it is found that the threat of the employees remaining in the country they are sent is not as high as it initially seems to be, and it may be further reduced if the firms take the appropriate measures. Moreover, under certain circumstances even if the employees decide not to return to the firm, this can still be translated to a benefit for the firm.

4.6. Discussion

Following data analysis, the results are discussed below both in terms of fulfilling the main aim of the research and in comparison and contrast with the observations made through the literature review.

With regards to individual characteristics, some similarities are observed in the people who tend to participate in mobility programs. One of these similarities has to do with age. All participants were between twenty five and twenty seven years old. This can be explained as the ambition for career growth or the desire to observe the world; both being expectations young people tend to have. This also depends on the motive of each individual as some were motivated to participate to accelerate their career development, others for personal reasons and others for both. Regardless of what the motives for participation were, the particular age range seems more appealing with regards to certain life obligations and or responsibilities, such as family.

Regarding job satisfaction and loyalty, most of the participants decided not to return to Cyprus by the time their secondment was over and even those who decided to return considered other options. This is an indication that all individuals who participate in secondments are attracted to the challenge of working abroad. This was no surprise as they were the ones to request the opportunity for mobility in the first place. What was very interesting to observe was that those who were absolutely satisfied with the approach of their firm towards their request to be mobilised were the only ones to return to Cyprus by the time their secondment contract was over and the only ones who are still working at the firm that initially sent them on the secondment. This evidence suggests

that the firm's approach towards the request of the individual can play an extremely important role in the job satisfaction and loyalty of the individual towards the firm. To add on this point, one of the individuals who returned to the firm that initially sent him on the secondment clearly mentioned that he had other job opportunities after the secondment which he rejected. This is also an indication of the high appreciation and loyalty an employee can show towards a firm he is satisfied with. This finding is in line with the results of the study of O'Shea et al. (2014) who stated that when ambitious employees are given the development opportunities they desire, they show high appreciation and satisfaction over their jobs.

Through the literature review, the skills and competences that were expected to be developed by the participants of the mobility programs were leadership, team participation and communication skills (Fojt, 1995). The expectation was met as all three skills mentioned were also observed in this study as key areas of improvement through a secondment. Additional skills identified by the sample participants were project management, accountability, innovation as well as some more technical skills.

Another expectation set from the literature review that the study met is the relation of secondments and specialisations and their importance to the firm (Hogan and Jeter, 1999). Most of the employees who went on a secondment specialised on a particular field or industry. The importance of this expertise is indicated by the fact that all of those who obtained a specialisation are still exercising it or kept on exercising it at least up to the point they left the profession. Interestingly enough, the ones who did not specialise on a field or industry are those who are still working for the same firm that sent them on the secondment. An explanation for this could be the fact that those individuals are also the ones whose secondment had the shortest duration abroad. This could mean that there was not enough time for them to obtain an expertise. It could also mean that the ones who are specialised may eventually feel less satisfied from their jobs as working continuously on a specific area of expertise might eventually seem as a tedious process. However, this observation could be coincidental as the study is not quantitative. Therefore, further research is recommended on the field to conclude on whether this observation can be reasonably generalised to the population of all professional accountants who obtain a specialisation during their career and to obtain a deeper understanding with regards to the reasons of their departure from their firms.

In relation to the quality of their work, the literature portrays a positive relationship between the size of the accountancy firm and the quality of services they provided (Choi et al., 2010). This idea is enhanced by the findings of this study which focused only on the leading accountancy firms in Cyprus and highlights the value that the firms set on providing professional services of high quality to their clients.

Another issue worth discussing is the fact that even though not all members of the sample identified an improvement in their performance evaluations during the time of their secondment, they all experienced an increase in the quality of their work. Additionally, all those who came back to Cyprus at some point of their career saw an improvement in their performance evaluations in Cyprus. Since the study aims in analysing the effect on the employing accountancy firm in Cyprus, regardless to whether the individual was performing well during the time of the secondment, which they usually did, the issue that matters is how well they performed in

Cyprus upon their return. Overall, the study findings demonstrate that all participants produced work of higher quality than they previously did.

Finally, according to the beliefs of the individuals who have participated in a mobility program, the risk of not returning to the firm in Cyprus is high. The study resulted to this finding by analysing two factors. The first was the fact that all the members of the sample either stayed abroad longer or considered doing so. The second was the observation of the members of the sample about the tendency of Cypriot participants not returning to their sending firm. People who were transferred within the EU tended to stay longer than their contract period, compared to others who returned back upon expiry of the contract. This was also observed in the sample of this study as the only participant who went outside the EU, returned to Cyprus by the time his secondment was over but he stayed only for one month to assist with the integration of his replacement.

5. CONCLUSION AND RECOMMENDATIONS

This study provided information on how accountancy firms in Cyprus are affected by mobility programs provided to the professional accountants they employ. The study has successfully fulfilled the research objectives and achieved its main aim. Both positive and negative effects of mobility programs provided to professional accountants were analysed, providing information on the overall impact of these programs to the accounting firms. The findings of this study could be useful for a number of stakeholders. The importance of this study as well as a number of recommendations for extending the research findings are discussed below.

5.1. Study Limitations and Recommendations for Future Research

An identified limitation of this study is that there is a lack of numerical evidence provided by the human resource departments of the accountancy firms. This means that the actual numbers of individuals who have participated in a mobility program, as well as the number of professional practitioners who have returned from such a program, are not available and thus the study cannot quantify the negative effect on the resources of the firm. The reason for this limitation is the fact that the firms denied access to the data required, due to internal policies. Future studies could attempt to further the research presented here. More specifically comparative studies could be conducted over a longer period of time. The reasoning for this suggestion is that mobility programs is a relatively recent phenomenon in the sector of accountancy firms in Cyprus. As a result, it is expected to observe changes in the approach of both the firms and the individuals. This future research could also include the perspective of the accountancy firms, possibly by interviewing employees working in the Human Resource department of the accountancy firms.

Moreover, a number of related topics could also be explored in future studies. Although these fall beyond the scope of this research and therefore were not considered, they are both interesting and important. Considering the results of this study and the lack of knowledge on these topics in current literature, a number of recommendations are provided for future research. In this respect, a suggestion for future research is to study the impact of specialisation on job satisfaction. This idea

was triggered by the finding that the individuals who obtained a specialisation during their secondment did not return to the firm in Cyprus and in some cases, they even ceased exercising the profession a few years later.

Another possible future research could focus on the impact of Brexit on the mobility programs of qualified accountants exercising the profession in Cyprus. The reasoning for this recommendation is the finding of this study that most participants choose the UK as their mobility destination. At this point this study cannot be conducted since the implications of Brexit are yet uncertain, however, in the future it would be interesting to observe whether participants will tend to select other destinations.

Furthermore, a study could be conducted to analyse what measures the accountancy firms can take in order to attract the participants of mobility programs back to the firm in Cyprus. This study provided some generic measures, however a study focusing solely on the actions that the firms can take to make the firm more attractive to those individuals could be interesting and useful for both the firms and the participating employees.

5.2. Conclusions

The findings of this study could be useful for a number of stakeholders. These could be either individuals being interested in participating in such programs, in order to have an expectation on the skills to be developed and the effect on their work, as well as the management of accountancy firms which offer to their staff the opportunity of a secondment abroad. With regards to the large accountancy firms that already provide this opportunity to their employees, the present study can help them gain a better understanding on how useful this kind of programs can be for them and how they could use these opportunities between their global networks, to positively impact the quality of the services they provide out to the public.

In addition, the findings of the study can also be used by smaller accountancy firms which do not belong to an international network and thus do not provide this opportunity to their employees. By gaining information on the value that the individuals who participate in mobility programs can bring to the firm, smaller accountancy firms may reconsider the possibility of partnering with an international network of accountancy firms. Moreover, it can deliver better knowledge regarding the threats it may bring to the already limited resources of these firms.

Finally, this study could be useful to the individual practitioners who are employed by an accountancy firm with a global presence as it can give them useful insights on the professional competences they may develop through a secondment as well as the effect on their quality of work and job satisfaction. Furthermore, it will give them an understanding of how important they will be as “human assets” to their employing firms and be aware of the value they will be able to add to the firm.

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The relationship between Corporate Social Responsibility (CSR) and product innovation within Cyprus

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Abstract

Purpose: This study evaluates the relationship between Corporate Social Responsibility (CSR) and product innovation focusing on green environmental products, in the drinks manufacturing industry within the Cyprus business environment. Most specifically, this study focuses on the relationship of a company's strategy with CSR; assessment of innovation advantages (in terms of quality, customer satisfaction and performance); as well as the investigation of the relationship between CSR, product innovation and the environment itself.

Design: An interpretive approach is adopted based on qualitative data collected through semi-structured interviews. The method implemented for data analysis is a combination of the general analytical procedure and cognitive mapping.

Finding: CSR is a concept which is related directly to product differentiation. Nowadays, companies make an effort to become more proactive in relation to the CSR concept, consequently producing more innovative and differentiated products. CSR contributes to the protection of the environment and can assist saving energy and resources. Green products and the environment as a whole are popular and significant terms, and companies should try to protect them.

Implications: The study has implications for the society, managers of companies, and lastly, policy makers. The final conclusions and results may encourage any company regardless of its size, to act as socially responsible, with the main aim to produce products which are innovative and, at the same time environmentally friendly. Meanwhile, the research findings emphasise the importance of performing research in the specific field and promoting different activities towards saving the environment and reducing potential negative environmental impacts.

Originality: The CSR concept has become a widely used term in the business environment, due to its positive impact on both the organisation and the society as a whole. Moreover, during the last decades, the environment, and the effects that different products and or strategies may have on it, is considered a sensitive issue for both companies and individuals. Inevitably, all the companies should have the responsibility and obligation to follow specific rules as a type of strategy in order to improve the level of customer satisfaction, quality and performance more proactively in relation to the CSR technique.

Keywords: Corporate Social Responsibility (CSR), product innovation, green environment, differentiation.

1. INTRODUCTION

The number of companies which invest in the Corporate Social Responsibility (CSR) model has increased dramatically, during the last two decades. The CSR concept has become a widely used term in the business environment. Vaaland et al. (2008), determined the CSR concept as the "management of stakeholder concern for responsible and irresponsible acts related to environment, ethical and social phenomena in a way that creates corporate benefits."

The concept of CSR can be characterised as a motivational tool for organisations and should be implemented in the production of products, processes, and services that aid to create their image in the marketplace with high reputation and trustworthiness. Studies have shown that CSR can foster positive public perceptions and build a 'reservoir of goodwill' towards an organisation.

Additionally, CSR can bring opportunities for innovation (Husted and Allen, 2007). Numerous companies are interested in designing and producing innovative products which are recognised for their quality and usefulness towards the environment. Different authors identified a positive correlation between the CSR concept and innovation. Moreover, the word innovation is related with more efficient and effective products, services or technological components. For that reason, a

company which acts along with the specific concept can also use innovation as a tool in order to develop a new market or market niches.

Furthermore, the environment has become a sensitive topic at an individual and organisational level alike. Most companies give emphasis on new raw materials which are "green", i.e. friendly to the environment, and also on innovative products. In Cyprus, there are organisations which are proactive based on this concept, and try to promote environmental issues during their production processes.

Numerous advantages encouraged companies to invest in the CSR concept including increased profits by improving the quality of raw materials; improved and increased their level of reputation and image of the organisation; created a sustainable competitive advantage; and a strong relationship with employees and customers which further help to significantly boost their level of satisfaction. It is very important to highlight the benefits of applying the CSR concept for each organisation, which at the same time, apply a variety of environmental activities which can make them unique within the industry.

The goal of this work is to evaluate the relationship between CSR and product innovation by focusing on "green" products. The specificity of this study is that it examines this

relationship of the two pre-mentioned variables in the drinks manufacturing industry within the Cyprus business environment. It is true that the concept of CSR can be analysed by different organisations in numerous ways. As each organisation applies the CSR concept in a different way, this work identifies a variety of differences in the way that this specific concept is developed.

2. STUDY BACKGROUND AND LITERATURE REVIEW

Different studies investigated how the CSR technique is implemented in the manufacturing industry. For each company separately there are different reasons why it invests in the CSR concept. This section reviews, compares and contrasts the findings from different studies to provide an understanding on the existing knowledge with regards to CSR and product innovation. Furthermore, this study adds to the literature by filling the research gap, since no study has previously attempted to analyse the relationship between CSR and product innovation within the Cyprus environment.

2.1. The Concept of CSR and Its Importance

There are a number of theories which discuss CSR practices, for example Carroll (1979) related CSR to social performance and later on, in 1999 he considered the role which businesses should play in society. In addition, Solomon (1993) referred to business ethics, Freeman and Evan (1990) associated it with corporate governance and Elkington (1998) investigated the perspective of accountability.

Additionally, You et al. (2013) suggest that organisations need to take from the society and also should exploit in the society. It is important to point out that if managers have as a major goal the growth and development of their organisations, it is necessary to follow a strategy which will lead to the healthy sustained operation of an organisation. An extensive number of organisations use the CSR technique as part of their business strategy for different reasons. Some imperative reasons are to improve their profits by increasing their revenues, to reinforce their social and environmental value, to create trustworthiness and strong relationships with their customers, to enhance customer satisfaction and to achieve future success.

2.2. Literature Review

Reviewing the literature will provide an understanding of the CSR concept. This research will analyse and compare findings of previous researchers relevant to the following objectives: the relationship between CSR and product innovation; CSR and customer satisfaction; product differentiation through the use of CSR; companies' strategy and CSR, as well as organisational performance and CSR.

2.2.1. CSR and innovation

There is a positive relationship between CSR and environmental innovation. In 1970, Japan was the first country which started to face pollution problems due to the rapid economic growth. Based on this situation, Cortez and Cudia (2010) suggest that Japan is a country which explored the field of environmental innovation and thus achieved -through the im-

provement of their processes and product design-, to be environmentally friendly. Consequently, cost savings and sales improvement through the environmental innovation resulted in the country by the effective application of CSR.

Moreover, according to Robinson and Stubberud (2013), environmental innovation created sustainable products. Nowadays, a number of manufacturing companies give emphasis on the productivity and more efficient use of their resources in order to be differentiated from their competitors. Consequently, companies increase their level of competitiveness and success. Additionally, based on the theory of Baregheh et al. (2009) innovation has an important role in creating value and sustaining competitive advantage. Thus, companies try to define their business models so as to be differentiated in contrast with other companies within the same industry. The CSR concept is actually an approach that must be branded in the decision making process and must be evaluated and measured as it can provide opportunities for innovation (Porter and Kramer, 2006). Moreover, Dory (2005) evaluates that innovation can be considered an effective exploitation of new ideas, using a foundation of existing knowledge to create new products and services, or to develop existing ones.

Unquestionably, Ilter (2012) agrees with the previous theories and separates the environmental term into two categories: profit and revenue. The author argues that there is a positive relationship between profitability and the environment as recycling is a method that has a positive influence on the productivity of the organisation. It is clear that organisations emphasise on products which are eco-friendly and at the same time are used for recycling, thus increasing the company's revenues, turning towards environmentally "green" products which are friendly for the environment.

2.2.2. CSR and customer satisfaction

The theory which was introduced by Wernerfelt (1984) and developed later by Barney (1991), explains that when the resources and capabilities are valuable, rare, inimitable and non-substitutable, they can constitute a source of sustainable competitive advantage. Thus, companies should hold certain intangible resources such as patents, goodwill and copyrights that competitors cannot imitate or buy easily and gain a competitive advantage in the market.

Nevertheless key players of each organisation respectively are its customers. Customers have the power to either positively or negatively affect the decisions that the organisation should take during its production process. According to Vlachos (2012), the CSR technique gives the opportunity to customers to express their ideas. Customers are those who help the business to remain successful within an industry. Customer loyalty is an important aspect for each company, because it can influence the survival and growth of an organisation.

The major competitive factor for each manufacturing company separately is the product quality which refers to different product characteristics for example durability, product performance and reliability (Boehe and Cruz, 2010). Most companies have as a main aim to produce products which are differentiated and as such create barriers to entry, protect customer loyalty and avoid imitation.

Thus, organisations can create a successful combination between innovation and environmental management in order to increase their competitiveness. Moreover, organisations

create products which are recognised for their differentiation and thus secure their exclusivity, and attain customer satisfaction, in order to avoid the imitation from other competitive organisations.

2.2.3. *Products differentiation and CSR*

One of the first studies which applied the theory of CSR comes from Hart (1995), who focuses on environmental and social responsibility and further argues that with the appropriate resources and capabilities, a sustained competitive advantage is achieved. Additionally, Russo and Fouts (1997) and Hedstrom et al. (1998) conclude that companies with high environmental performance have higher financial performance and also can succeed through the implementation of new products and technologies.

Environmental awareness is one of the most common and heavily emphasised approaches to CSR (Egri and Ralston, 2008). When a company is involved in various environmental activities and corporate communication, then this company can be environmentally aware. Most companies try to find their own innovative approach to environmental awareness that aids towards the development of unique and variable business models, skills and operations. It is true that innovative approaches which lead to environmental awareness can be trustworthy and contribute towards a green reputation as Hillestad et al. (2010), explain.

Manufacturing industries need to focus on the importance of intangible resources and capabilities in order to attain product differentiation. Branco and Rodrigues (2006) examine the application of the resource-based theory to CSR. They consider that there is a need for appropriate raw materials in order to be successful in their industry. The key driver for the success of each business always depends on the intangible resources that they have and also the methods they practice in order to utilise the resources. A manufacturing company can use these intangible resources during its processes which lead to improved performance.

2.2.4. *Companies' strategy and CSR*

Erhemjamts et al. (2013), highlight that the strength of each organisation is related either positively or negatively with its investment policy and strategy. In contrast, Anderson and Bieniaszewska (2005), explain that CSR is part of a business strategy which helps to evaluate and measure the impact on the profit ability for the organisation. Thus, organisations follow a specific strategy in which they give attention to the reputation and also the image of the organisation. Moreover, another study examines how CSR initiatives add value to companies and how these companies perceive the impact of CSR initiatives on customers and society. The study reveals that companies' initiatives are linked to the business strategy, where CSR initiatives add value to the companies by promoting brands reputation. These initiatives are well organised and support the altruistic efforts with effective results for the companies and the society as well (Batista et al., 2017).

Most of the times, organisations with a successful financial performance highly invest in social issues. According to Erhemjamts et al. (2013), social performance can negatively affect companies due to the investment on the value added projects or on profits that shareholders get from the company as a return. Moreover, stakeholders have the responsibility to

affect and be affected by the actions of a company thus can build long-term value creation and also have the ability to create competitive advantage. Moreover, the external sources like investors and shareholders can provide an independent opinion and confirmation about the Corporate Social Performance (CSP) which is correlated to a true and fair view of the organisation.

Additionally, Wagner (2010), relates CSP with the internal source of the organisation. He argues that a company with a high level of CSP can also have employees which are more innovative and thus, positively contributing to the firm's level of innovation. Employees can increase their performance as they have more innovative ideas and knowledge. As a result, this can assist employees in producing products which are innovative and friendly to the environment.

2.2.5. *Organisational performance and CSR*

According to Pavelin and Porter (2008), the performance of each organisation differs from other organisations. This is due to the years of experience of each organisation separately. The start-ups organisations operate in an entirely different way in comparison with older organisations, based from their experience in their industry. The reason for this specific phenomenon is that new organisations use the specific performance in order to introduce new products which lead to its survival and success. Furthermore, Bellow (2012) clarifies that innovative products can lead to a growth path and improvement of their financial performance. There is a need to provide more resources to social activities in order to improve the financial performance of an entity. In addition, this is characterised as a circle, because if the company manages to create a combination of a good social performance and similarly increases the business practice, then better financial performance can be obtained in comparison with its competitors (Nelling and Webb, 2009).

In contradiction, Hill et al. (2007) explain that CSP is part of CSR activities which is used by investors in order to prepare their purchase decisions. The performance of each organisation can also be affected by internal and external sources. This research work refers to the investors as being an external source which can also affect indirectly the performance of the company.

As a result, organisations need to combine social performance and managerial practice in order to have strong financial performance. Moreover, larger organisations which actively implement CSR practices can achieve increased level of financial performance by producing differentiated products with lower costs. This may cause the improvement of an efficient production (Torugsa et al., 2012).

2.3. **Research Gap**

Having reviewed relevant literature in the area of CSR, innovation and performance, it is concluded that various authors agree and/or disagree with other academics in relation to CSR, its importance to the company as well as its relationship with innovation, environment and performance.

It is important to highlight that the number of companies which use CSR increases rapidly. An organisation that has never considered developing CSR, decides to develop and apply CSR and therefore become innovative and competitive. A number of companies in Cyprus try to adopt the CSR philoso-

phy but they do not have the appropriate knowledge about the concept of CSR and its outcomes. Over the last years, product innovation which is concerned with “green” environment has become a major aspect for the success of a business. There are numerous companies which try to be sensitive with issues relevant to the environment, because they improve their image and reputation in the market place.

According to this study, it is important to explore the concept of CSR in relation to the Cyprus manufacturing company and examine the extent to which businesses adopt it. This research will analyse the relationship between CSR and product innovation within the Cyprus business environment by focusing on “green” environmental products. This study is significant because the concept of CSR in relation to the Cyprus manufacturing industry is an under-researched area in the context of Cyprus. Lastly, this study opens future research avenues for further research which could explore the context of Cyprus in more depth.

3. RESEARCH METHODOLOGY

3.1. Paradigm

The study has adopted an interpretive (phenomenological) paradigm. Collis and Hussey (2013) explained that this specific type of research is subjective, as it is based on social reality. Also, the interpretive paradigm provides an explanatory frame of the social phenomena and further requires data based on a non-numeric outline.

Moreover, the qualitative (interpretivism) methodology was the most appropriate way for the collection of the specific data which is related with the CSR concept and product innovation. By using the qualitative methodology, data are collected through case studies from researchers who previously studied a similar topic. In addition, the case study approach focuses on a single unit of analysis which in this case is a set of companies, and more specifically the managers of companies within the manufacturing sector. The study adopts a qualitative research design as it focuses on beliefs, knowledge and perceptions of managers in the drinks manufacturing industry.

3.2. Data Collection Methods

The primary data were gathered from each manufacturing company through the method of an interview. A significant benefit of interviews is that questions can be given for further clarification during the interview process, for an extensive response and development of new ideas, when necessary. The interviewing process was related with the managers who are responsible in CSR matters of each manufacturing company separately. The interview schedule was divided into two different parts. The first part included personal questions related with the interviewee and his or her knowledge on the subject. The second part included questions about the CSR techniques, product innovation and “green” environment. Also the structure of the interview consisted of close-ended and open-ended questions.

The secondary data was collected from the website of each company separately. The website of each manufacturing company is a representative source, as there is relevant information about the implementation as well as the evaluation of CSR activities and strategies.

In Cyprus, the number of drinks manufacturing companies is limited with, a total population of only six. Precisely, interviews were conducted with five companies namely: Amalia, KEAN, Lanitis, Carlsberg and Charalambides Christis. In qualitative studies there is no need for a representative sample because the purpose is not to generate results but rather study specific cases, and consequently the sample is small but the exploration is in much more depth and breadth.

3.3. Data Analysis Methods

The methods that were implemented for the data analysis combine the general analytical procedure and cognitive mapping. The two methods are under the umbrella of the non-quantifying methods of qualitative analysis.

The general analytical procedure is a method that is used in order to identify final conclusions in comparison with the literature review section. The interviews were converted into transcripts, coded, categorised, analysed and lastly compared and contrasted with the findings of previous studies. Cognitive mapping enabled the researcher to analyse and interpret views and situations in a graphical form.

Cognitive maps were examined to determine the most central terms, the explanation of the problem in terms of causes and consequences and the use of evidence. This technique helped the authors to grasp a better understanding of their own assumptions, the viewpoints of the interviewees and the ways others see their own position.

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1. CSR Implementation in the Cypriot Drinks Manufacturing Industry

All companies strongly agree that an entity which implements the CSR concept can also improve its image and reputation. Each company respectively tries to provide goods and services that are acceptable to their customers. The receivers, who are the consumers, have an important role as they can affect the marketplace in a positive or negative way. In this situation, if customers are satisfied with their goods then the production can increase together with the company’s image as well.

Moreover, a company which operates based on the CSR concept can build strong relationships with its employees, customers and suppliers. All four companies (eighty percent) out of the total five companies studied are socially responsible, since the CSR technique can provide them the opportunity to invest in their corporate image. Also, a company which operates based on the CSR concept can build long-term relationships with their suppliers and employees which will entail enriched confidence among them. A company can achieve to create future collaborations with other companies as they can attain consistency and readiness of their products. Conversely, three of the manufacturing companies (sixty percent) suggested that a firm which is actively involved in the CSR concept does not necessarily have more profits in contrast with other companies. Most of the activities of CSR are very expensive and the company should pay for all expenses without receiving additional income from different events.

Most of the companies give significant efforts in order to improve and increase the value of their business. It is important to focus on the customer needs and also to provide

products which are valuable and innovative. During the production of innovative products, the company can attract new customers or provide products for a specific group of people (niche).

4.2. The Relationship Between CSR and Companies' Strategy

A strategy of an organisation is not always related with its reputation, image and competitiveness. All companies apply a strategy in relation to the environment and build relationships with people who are directly or indirectly related with the organisation. Anderson and Bieniaszewska (2005) defined that a company which entails CSR as a strategy can improve the relationships with people as they have the opportunity to understand peoples' beliefs and perceptions.

Three companies (sixty percent) apply CSR as a social strategy which endeavours towards the improvement of their reputation and image in the market. Based on this situation companies can attract new niches customers and build strong relationships with them in terms of trust and loyalty. Thus, companies can increase sales and profitability in the foreseeable future. Their opinions agree with the conclusions of Hsu (2012) which defined that the CSR concept is part of a business strategy that gives the opportunity to the organisation to invest in reputation. Also, companies can become more known as they have the opportunity to gain exposure through the social media.

Moreover, the minority of the companies stated that their goal is not to invest in the reputation and market image of their company. They build their company's image through their effort to become socially responsible. It is clear that a strategy of an organisation is not always related with its reputation, image and competitiveness. All companies apply a strategy focusing on the environment and on the development of relationships with people, who are directly or indirectly related with the company.

4.3. Innovation

Nowadays, a high percentage of companies emphasises on the advantages of innovation in terms of quality, customer satisfaction and last but not least on company's performance. Baregheh et al. (2009) explained that innovation has an important role in creating value and sustaining competitive advantage. Sixty percent of the interviewed companies absolutely agreed with this statement. It is important to create strong values of innovative advantages which then lead to the sustainable competitive advantage and success in their industry. Over the period of time, customers have different needs and preferences and it is very important for companies to adapt to new ways, and thus attain enhanced quality and customer satisfaction.

4.3.1. CSR and product innovation

Currently, most of the companies try to implement CSR technique and product innovation, which also affects the environment. The environment is an important matter and for that reason organisations try to encounter current needs, but without compromising the quality of the world's forests for the future generations.

Seventy five percent of the respondents agreed with Robinson and Stubberud (2013) which elaborated that environmental innovation is an important criterion to create sustainable products. All companies concluded that the products which are innovative and environmentally friendly can increase the level of demand and supply and consequently enrich the organisational success. On the contrary, the remaining percentage of the respondents did not absolutely agree with the above conclusions, because the products which are innovative and friendly cannot always improve the level of competition and success of the business. Furthermore, it is pointed out that most of the times a company's success depends on customers and how those people evaluate and assess the specific products.

4.3.2. "Green" environment and reduction of environmental impacts

Over the last decades, the term "green environment" has become very popular and most of the companies give an effort in order to protect the environment by working towards the reduction of environmental impacts. Four companies are actively involved in the protection of the environment and also some of their actions are common as all of the companies use progressive standards for food safety, such as ISO 22000:2005 (refer to Figures 1 to 4). The specific standard can help an organisation separately to identify and control any food safety hazards. Also, it is important to highlight that all companies should ensure the quality of the products that they export.

Moreover, all companies introduced the concept of recycling in their organisational environment and they make an equally important work for waste minimisation focusing on reduction, recycling and re-usage. Moreover, they give an effort in order to reduce the use of harmful chemicals and atmospheric emissions, invest in new and advanced technology as well as cooperate with environmental organisations such as the Green-Dot Cyprus.

4.4. CSR and Quality

For each organisation respectively, the quality of their products is a significant concern because the majority of customers consume products of high quality. Quality is a significant factor for product differentiation which leads to a competitive advantage. Based on Hsu (2012), the product differentiation is related directly with brand differentiation. The majority of companies (seventy five percent) make an effort to protect their patents through the quality of their products, which eventually turns into product differentiation. It is clear that customers are the key players which have the option to select the brand that they will consume.

The quality of the products depends mainly on the raw materials that they use during the production process. The Cypriot drinks manufacturing companies achieve to obtain raw materials -most of the times high in nutrients- only from local producers without any risk. Also, during the production of the final products they do not use any harmful substances or preservatives. It is imperative that in the production process, the companies apply all the appropriate controls in order to ensure high quality of the final products. For instance, the manufacturing companies use the most suitable resources when they produce bottles of water in order to keep the material safe for consumption (refer to Figures 1 to 4).

4.5. CSR and Customer Satisfaction

Customer satisfaction is another important element of innovation that each company respectively gives an effort, in order to achieve satisfactory results. Nowadays, customers can affect a specific company in a negative or positive way. The concept of customer satisfaction is characterised as a cycle because companies produce valuable products which are based on the preferences and needs of customers. If customers are satisfied with the products inevitably the reputation, productivity and financial performance of the business will escalate in the long-run.

In each of the four companies (eighty percent) there is a marketing department where they can undertake the appropriate research and development in order to identify the level of customer satisfaction in comparison with their competitors. For instance, the Sales Manager of a Cypriot drinks manufacturing company explained that in a marketing department, specialised people prepare questionnaires to their focus group -customers- for their overall satisfaction. There is a positive relationship with the argument of McWilliams and Siegel (2001) which defined that research and development is a form of investment, where companies can identify the needs and preferences of customers, and thus produce a differentiated product. Additionally, they analyse data in contrast with their competitors in terms of price, quality and the market segment on which they focus.

All of the companies agreed that an entity should concentrate on customer wants in order to satisfy their needs and preferences. Customer satisfaction is a priority for each company, because it can contribute to its survival and success. For instance, a high percentage of customers is interested in buying a specific energy drink, and the company in question conducts research so as to develop a sustainable and competitive product for its customers.

Nowadays, the country faces economic problems which are relevant to negative consequences within the market. For that reason the drinks manufacturing companies try to decrease their prices but to keep the same high quality in order to avoid the risk of customers turning to substitute products. The main aim is for customers to continue purchasing the specific product with the same frequency, since the level of customer satisfaction depends almost on how frequently customers buy the specific products.

4.6. CSR and Financial Performance

The companies defined that the CSR concept can improve the performance of the company which acts as an innovative factor in different ways. The Commercial Manager of one of the companies explained that there is always a specific purpose which drives a company to improve its performance. During the years, the company gain experience and thus applies this knowledge through the introduction of new ways of performance. For instance, this company invests in new technology in order to create packages that the products do not have any alterations (see Figure 1). Additionally, a Sales Manager defined that CSR can positively improve the performance of the company because there are different areas that the company does not give the appropriate attention. Based on this, the company can prepare targeting initiatives, aiming towards the success of the organisation and enhancement of its financial performance as well. The company desires to focus on dif-

ferent parameters within the organisation and take the most appropriate decisions (refer to Figure 2).

In contradiction, the CSR Manager and Brand/Creative Manager of the other Cypriot manufacturing companies explained that CSR can improve the performance of the organisation mainly through social activities. Nowadays, companies should find innovative and pioneering ways in order to improve social needs. All companies prepare their daily performance with all the appropriate tests in the different departments of the organisation. Besides, in each organisation there is a daily computerised report which analyses each test and procedure, certified from different European institutions (see Figure 3 and Figure 4).

Furthermore, the preceding conclusions agree with the opinion of Bellow (2012) which explained that the organisation which produces innovative products can lead to organisational growth and financial performance respectively. The company can become more experienced through the years and employees can improve the performance of the business as they have more ideas to invest in the introduction of new products. Lastly, according to Hill et al. (2007) and Wagner (2010), the performance of each organisation is related directly to its internal and external sources. All of the companies give significant attention to their stakeholders as they can directly and indirectly affect the performance of the business. Each company tries to satisfy different parties so as to improve its productivity and image as well.

4.7. Conclusive Remarks

CSR is a technique which relates directly with product differentiation. Nowadays, companies make an effort in order to become involved in proactively implementing the CSR technique and also to produce products which are innovative and differentiated. This can be achieved through manufacturing of products which are also environmentally friendly. Moreover, the involvement of each company in CSR is different and this is due to the size of the company. Larger companies are more progressively involved by focusing on "green" products and the protection of the environment as a whole, in contrast with smaller companies.

It is clear that the CSR technique contributes to the protection of the environment and assists towards saving energy and resources. "Green" products and environment as a whole are popular terms and companies try to protect the environment through a variety of ways in order to work along with the European Commissions' principles and guidelines. Each company separately, is differentiated depending on the way that it implements CSR and innovative products which then entice to green environment. There are organisations which exert this specific field through the distinct activities that they implement in order to protect the environment from negative environmental impacts.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

The CSR technique contributes to the protection of the environment and further assists in saving energy and resources. All companies are considered to be sensitive with the specific concept as they make an effort to minimise the environmen-

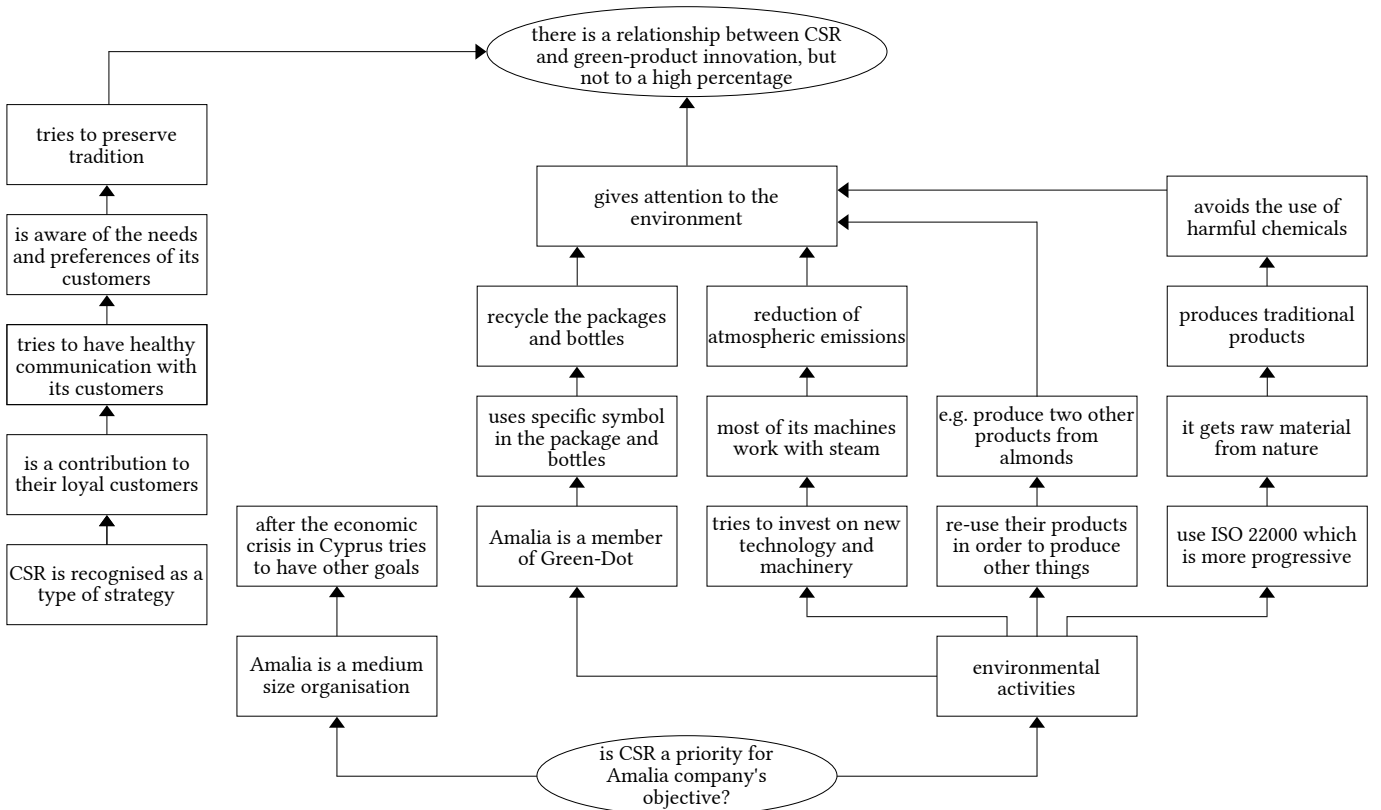


Figure 1: Amalia's CSR strategy

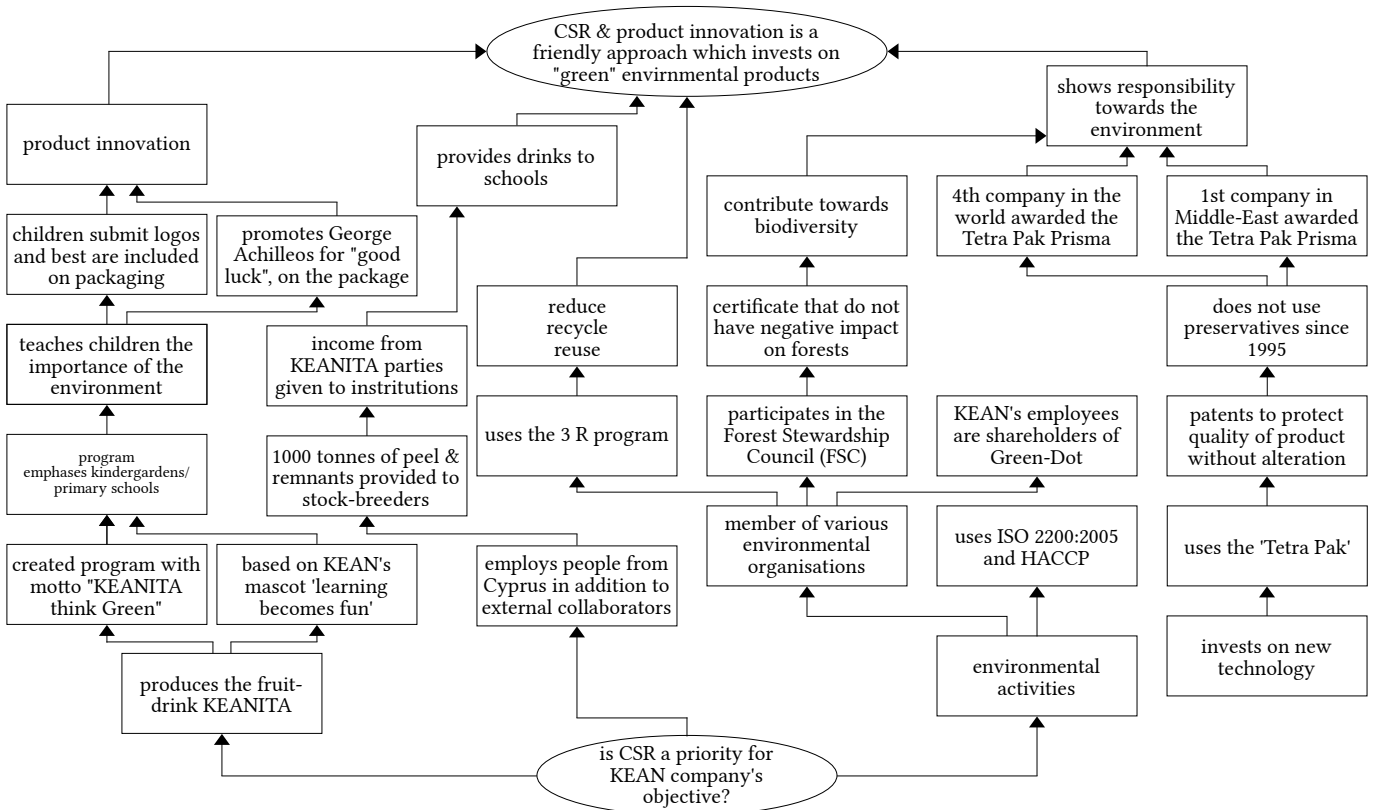


Figure 2: KEAN's CSR strategy

tal impacts. The future look for all the manufacturing companies in the CSR engagement is to continuously be involved in crucial projects which contribute to green and innovative products. Additionally, they emphasise the implementation of R&D for the introduction of more eco-friendly products under the umbrella which combines product innovation and green

products. Also, it is important to point out that companies desire to find packages which are friendly and do not alter the quality of their products. Furthermore, companies continue their activities by focusing on specific areas which are related with the environment, so as to increase the level of customer acceptance. Last but not least, over the period of time

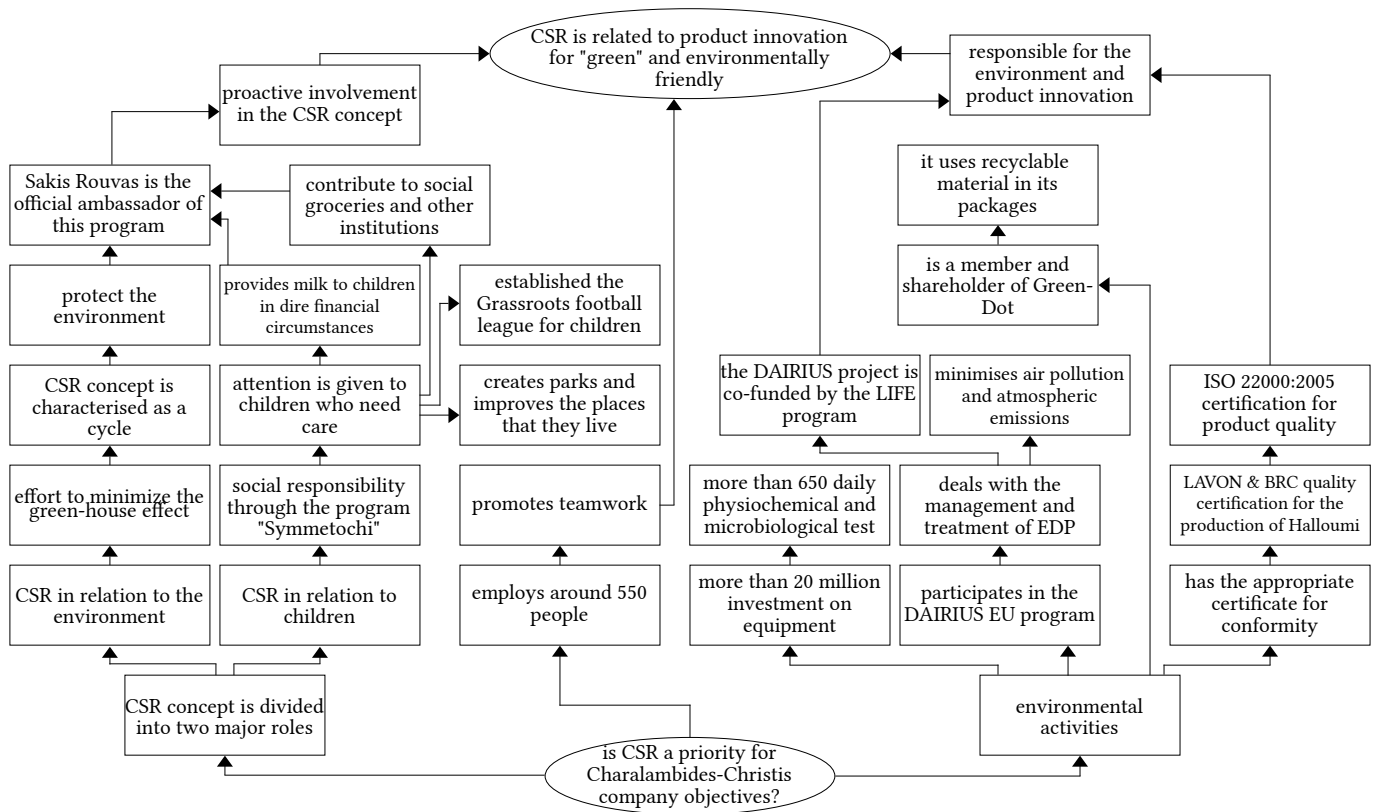


Figure 3: Charalambides Christi's CSR strategy

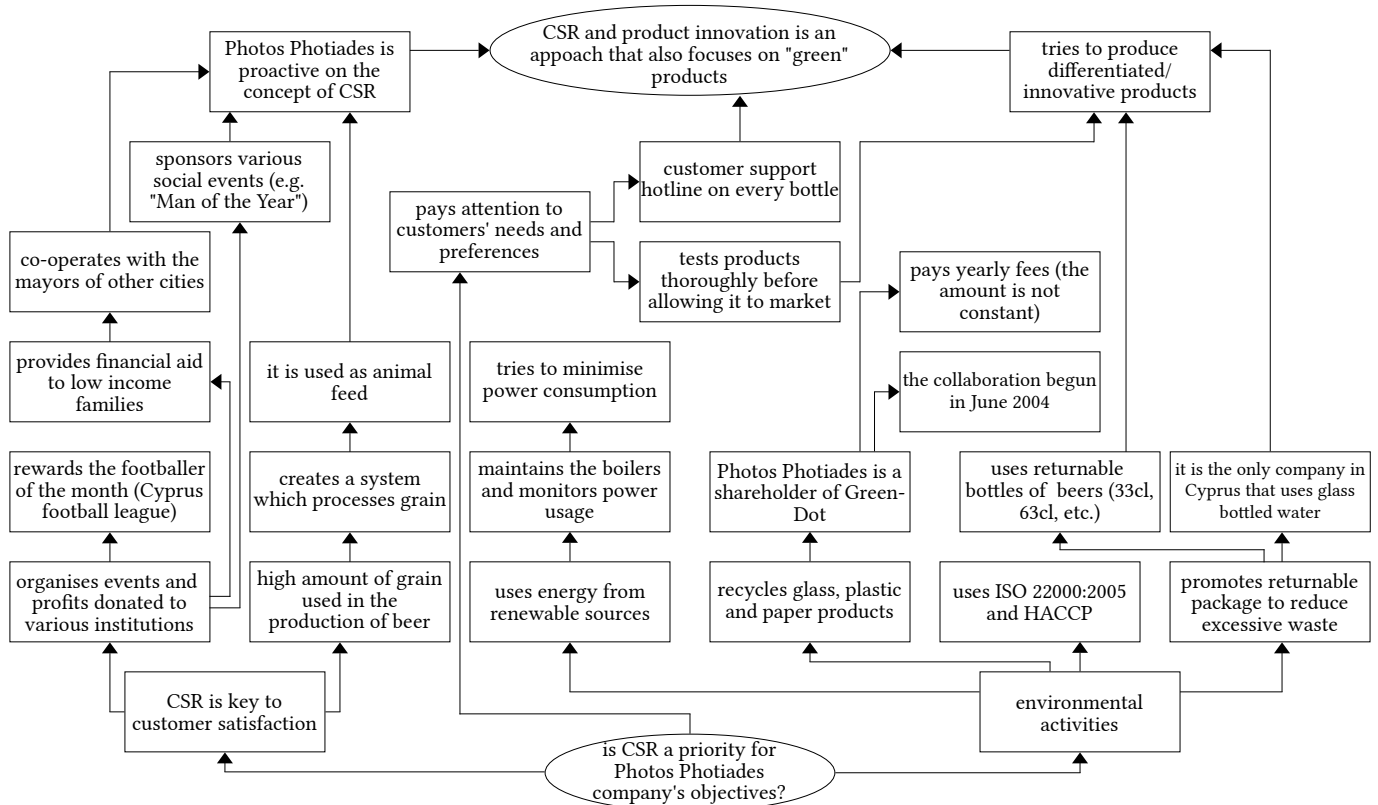


Figure 4: Photos Photiades's CSR strategy

the companies will become stronger and better at an international level, through the correct decisions. Moreover, CSR engagement will be sustained by trying to find new innovative ideas which positively affect the protection of the environment. Also, companies should increase their cooperation with external collaborators which will eventually lead towards new

developments.

All companies prepare significant work in relation to CSR and product innovation, by focusing on "green" products. For each company the CSR technique is considered as a priority towards achieving the business objectives. Mostly, all companies apply the CSR technique with an analogous way as they

try to introduce innovative products and further engage in enhancing quality development. Unquestionably, it is important to improve the implementation of CSR and also to be an excellent example for other companies to be followed, leading to future strategic progression.

In a post-crisis era CSR has a significant effect on organisations' reputation. It is true that when a company possesses a strong CSR reputation, consumers tend to judge it as less responsible for a crisis and therefore less vulnerable to brand damage during crisis.

5.2. Recommendations

The engagement of a company with the CSR concept almost depends on the goals that each company wants to accomplish and last but not least on the size of each organisation. It is important to highlight that SMEs focus on other goals rather than on the CSR concept. Additionally, companies do not only employ the CSR technique as part of their strategy in order to improve their competitiveness, image and reputation. Companies apply CSR as a strategy in collaboration with the environment by improving competitiveness and innovation. SMEs do not apply European environmental laws and this is due to the fact that they are unaware of the environmental issues and legislations that are applicable to their activities.

The European Commission's aim is to improve the SMEs compliance with the proper environmental legislations. As the economic situation of the country affects SMEs negatively, the European Commission should focus on the reduction of costs in order to improve the eco-efficiency of those companies and enhance their innovation and competitiveness. The European Committee should be involved more proactively with the environmental perception and should provide appropriate programmes about the protection of the environment, by minimising possible harmful environmental impacts. Each company respectively should focus on the specific programmes in order to ensure that the environment will be accounted for the development of their strategies.

Moreover, the government should be a key player for each company. The government should give incentives to the companies to focus on customers, the quality of products and the environment itself. Another significant recommendation is to work along with the European Committee and focus on legislations which will improve companies' internal procedures, by integrating the environmental aspect.

5.3. Recommendations for Future Research

Nowadays there is an all-inclusive relationship between the CSR concept and product innovation, focusing on green products. Further research can also be conducted as the concept of the CSR is not related only with product innovation and green products. Suggested future research could involve: The relationship between the CSR concept and customer satisfaction concentrating on competitiveness; the vital relationship between the CSR concept and PESTEL analysis; CSR application as a business strategy.

Lastly, it is important to emphasise that the CSR technique should be encouraged at an international level, since it is a positive phenomenon for both organisations and the society as a whole.

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