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Editorial Preface

This is second issue of volume one of the International Journal of Business Research and Management (IJBRM). The International Journal of Business Research and Management (IJBRM) invite papers with theoretical research/conceptual work or applied research/applications on topics related to research, practice, and teaching in all subject areas of Business, Management, Business research, Marketing, MIS-CIS, HRM, Business studies, Operations Management, Business Accounting, Economics, E-Business/E-Commerce, and related subjects. IJBRM is intended to be an outlet for theoretical and empirical research contributions for scholars and practitioners in the business field. Some important topics are business accounting, business model and strategy, e-commerce, collaborative commerce and net-enhancement, management systems and sustainable business and supply chain and demand chain management etc.

IJBRM establishes an effective communication channel between decision- and policy-makers in business, government agencies, and academic and research institutions to recognize the implementation of important role effective systems in organizations. IJBRM aims to be an outlet for creative, innovative concepts, as well as effective research methodologies and emerging technologies for effective business management.

IJBRM editors understand that how much it is important for authors and researchers to have their work published with a minimum delay after submission of their papers. They also strongly believe that the direct communication between the editors and authors are important for the welfare, quality and wellbeing of the Journal and its readers. Therefore, all activities from paper submission to paper publication are controlled through electronic systems that include electronic submission, editorial panel and review system that ensures rapid decision with least delays in the publication processes.

To build its international reputation, we are disseminating the publication information through Google Books, Google Scholar, Directory of Open Access Journals (DOAJ), Open J Gate, ScientificCommons, Docstoc, Scribd, CiteSeerX and many more. Our International Editors are working on establishing ISI listing and a good impact factor for IJBRM. We would like to remind you that the success of our journal depends directly on the number of quality articles submitted for review. Accordingly, we would like to request your participation by submitting quality manuscripts for review and encouraging your colleagues to submit quality manuscripts for review. One of the great benefits we can provide to our prospective authors is the mentoring nature of our review process. IJBRM provides authors with high quality, helpful reviews that are shaped to assist authors in improving their manuscripts.

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A Business Review of E-Retailing in India

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Abstract

As a professor in computer science I am very much interested in training my students in e-Commerce and prepared myself for an in depth research in this area and to present a quick journal about e-Retailing concepts / framework, how an organization can start e-Retailing business quickly. Its Pro's & Con's, how to make the e-Retailing venture successful. How retailers should plan / experience to achieve varying success by leveraging the internet technology.

How to incorporate traditional retails practices with Internet technology. And strive for success in India. How internet is used by users and its use for online shopping. It serves as a best article for all the readers across the globe.

Keywords: E-Retailing,E-tailing, E-Commerce, Online Store, Retail, E-Business.

1. INTRODUCTION

E-Commerce is a huge domain on conducting business over internet and e-retailing is part of it. When we discuss on digitally / Internet enabled commercial transactions between organizations and individuals using latest web technologies as per the policies of the Organization it takes the form of e-business. Nowadays, 'e' is gaining momentum and most of the things if not everything is getting digitally enabled. Thus, it becomes very important to clearly understand different types of commerce or business commonly called as e-Commerce.

There are mainly five types of e-commerce models

1. Business to Consumer (B2C)

This model involves organizations as business houses and consumers and customers. This is the most common model in e-commerce. In this model, online businesses sell to individual consumers. When B2C started, it had a small share in the market but after 1995 its growth was exponential. In this business model the business house will have a e-commerce website which will list all their product categories with detailed information about products with photographs, flash animation and comparing similar products etc., for quick decision making over web. E.g. An online Music portal selling CD's / DVD's and streaming Audio on the web e.g. www.imusti.com.

2. Business to Business (B2B)

It is the largest form of e-commerce involving business of trillions of dollars. In this form, the buyers and sellers are both business entities and do not involve an individual consumer. It is like the manufacturer supplying goods to the retailer or wholesaler. E.g. www.indiaplaza.in is a online store, which sells popular branded products to consumer, where its supply chain network directly linked to Manufacturer. Hence Business to business model.

2. Consumer to Consumer (C2C)

E-Bay is an excellent example for this model an auction site where a consumer can sell their antique or old used items at discounted price to others, rest of the consumers who are all interested in those items will bid for that. This auction will happen for a time period and ends; now the highest bidder will make payment and buy the product. Here e-bay plays a role of having / facilitating a platform to make consumer to consumer transactions.

3. M-Commerce

Now a day's all business executives were busy and want to do financial transaction without going physically to bank. Example: Consumer want to pay their utility payments viz., Insurance premium, Telephone bills, Income taxes etc., Transfer money to anybody in this world via mobile banking (e.g. ICICI Bank iMobile) opens up the new technology of ecommerce as Mobile commerce. Further the regular online stores were also optimizing their site user interface design in order to make consumers shop from their mobile devices viz., iPad, iPhone, Android enabled phones, and Microsoft windows mobile 6.x enabled devices.

There are other types of e-commerce business models too like Business to Employee (B2E), Government to Business (G2B) and Government to Citizen (G2C) but in essence they are similar to the above mentioned types. Moreover, it is not necessary that these models are dedicatedly followed in all the online business types. It may be the case that a business is using all the models or only one of them or some of them as per its needs.

2. E-RETAILING A BRIEFING

To start an e-Retailing business, an organization or an individual should have the below.

1. A Unique Idea / Product to sell

When all Personal computer assemblers sell PC's and Servers in a traditional way, Michael Saul Dell, founder CEO of Dell Inc., got a unique idea of selling PC's over web. Beyond this he allowed users to choose all components one by one based on their interests and requirements and delivered a assembled PC over web, which was a grand success.

2. A Perfect Business Plan

Is all about the e-Retailing business idea, Product or services, people involved, their expertise, a Project report with all standard projected statements prepared by a professional team, Competitor analysis, Capital investment, Loans, Business location, Government regulations & policies, Technology plans, and IT infrastructure required.

3. Technology Plans

Organization may start off in a small way and then based on the response they can get more funding and grow in a big way.

- They need to finalize an attractive easy to remember domain name e.g. www.dell.com .

- Need to finalize a hosting server to book web space from their various plans e.g. www.Hostmonster.com to start with and later go for their own scalable IT infrastructure setup based on the response and growth.
- Need to Acquire IT team for developing e-Commerce website or to outsource the work. Also we can think of using Open source like OS Commerce a popular e-Commerce application and Open source CRM application for customer relationship.
- If we are going to develop from the scratch on our own technology, the below website development process will be followed as per Fig. 3. Web site development process.
- Compare and finalize Payment gateway based on their initial setup fee / transaction fee the popular payment gateway service providers are CC Avenue, ICICI, Bill desk, Pay pal and few more players.
- Once the website is launched, related internet marketing, popularly called as SEO (search engine optimization) work to be started to increase the popularity and visitors of the site.
- Plan and organize supply chain management to deliver product or service to the online users who place orders.
- Post sales support plans.

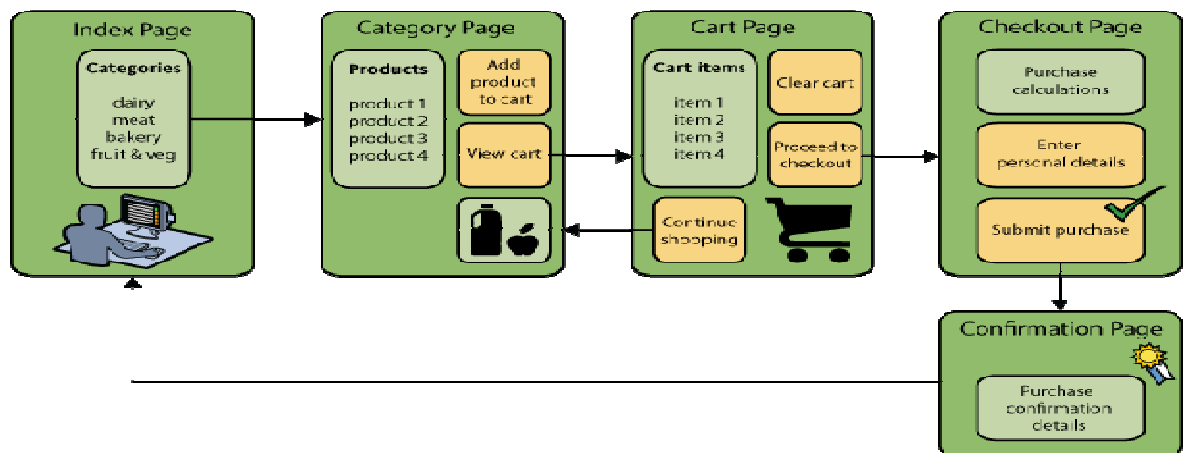
4. E-RETAILERS BACK OFFICE MANAGEMENT

There will be a huge team working on the back end systems of the web site which is called as control panel / system admin.

In which a group of people will be updating the product categories, products, prices, specifications and many other information before it's getting listed in the website.

Other than this to attract more users, the Marketing team will often send mailers / newsletters by giving more offers.

For an basic idea below image depicts the minimum required pages for a e-Retailers web site.



5. Payment Gateway

Now the e-Retailers web site is ready with products listed and when the online users orders the product online, the Retailers should link the Bank account with 3rd party payment gateway, to which the payment will be credited.

6. HOW AN E-COMMERCE SITE WORKS

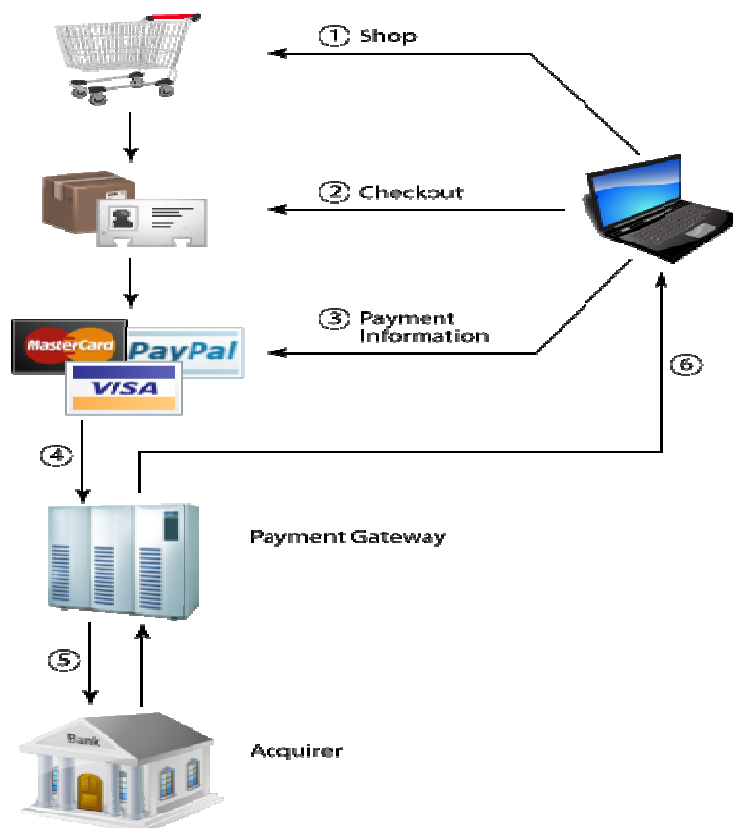
Normally a user will get to know about a online shopping web site through many ways, most frequently all online users will find websites on the go by using Google search or any other search engines.

When they see the web site information link, they click to it, complete the website registration process if any, choose the products they are interested, compare similar products specification cost etc., and confirm the items selected and finalize the invoice and make payment via their debit card / credit card bank account or via Pay Pal or Google checkout.

Once the payment is received the merchant will receive the payment, start processing the order, and ship the product to the user's delivery / shipping address.

Further if the product is carrying warranty, post sales support and service should be facilitated to the customer in order to create good word of mouth and get a good returning customer base which is the key success factor for the e-Retailer.

Let me illustrate the buying process in the image below:



1. Online visitor of the site, will pick up the items to be purchased.
2. Confirming / finalizing the item list selected and checkout.
3. Enter the credit / debit card / Pay Pal information to make the payment.

4. User payment information is getting checked with banker via payment gateway and once its authenticated.
5. The payment will be credited to retailer account and an Order confirmation is shown to the visitor along with order details and shipping information.

The visitor will also be notified on the purchase made via email.

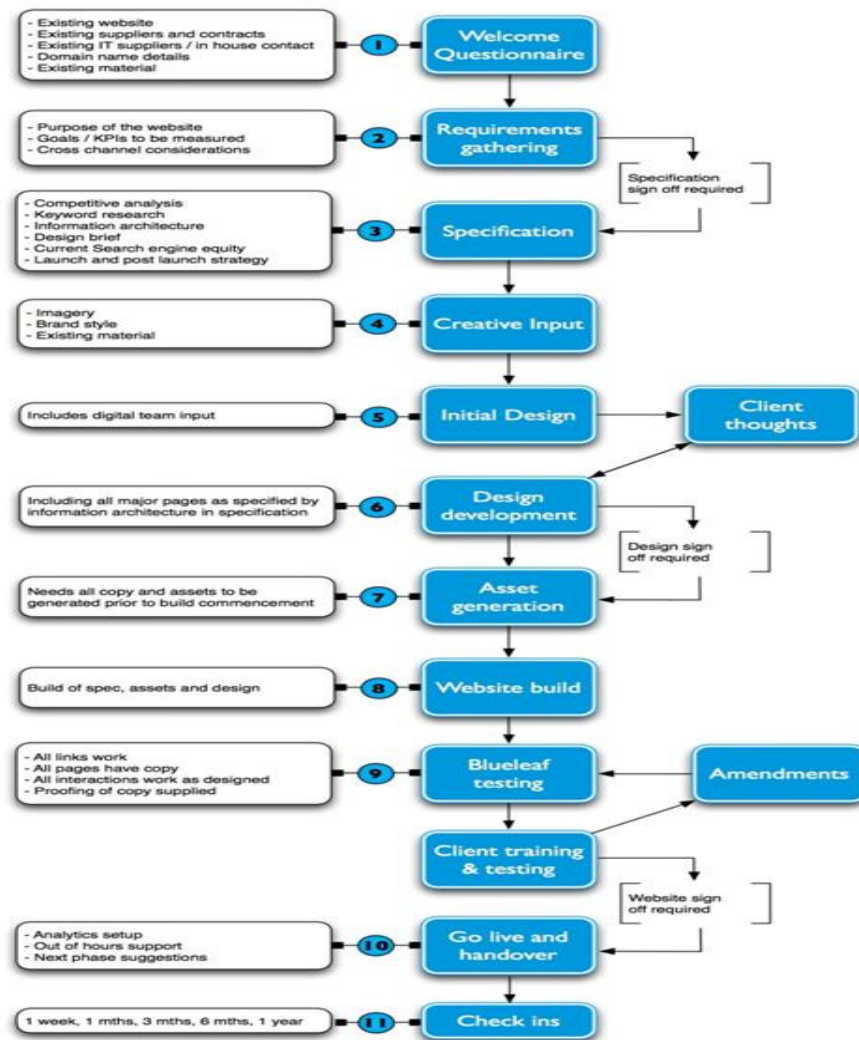
The visitor will be able to track their order status and an SMS / email update will be frequently sent to visitor on the product or service delivery.

3. E-RETAILING WEBSITE DESIGN AND LAUNCHING PROCESS

Once the Retailers business model and web site design layout is finalized. The software consulting and development team will start developing the site.

They will create all product categories, price, specifications and other details; put it in a test site for unit and integration testing.

Once the testing is over, it's being handed over to retailer for their acceptance testing. Once the retailer is satisfied with the performance of the web site; upon getting acceptance; the web site is moved to production server. Now the Retailer will initiate the web site promotional activity in order to get more visitors and generate revenue



4. GOVERNMENT REGULATIONS IN RETAIL

For the growth e-commerce, Indian government is taking necessary steps through effective Telecom policies, introduced Information Technology IT ACT to create necessary legal and administrative framework.

To build the confidence among common public to increase online business, The CCA (Controller of Certifying Authority) has created PKI (Public Key Infrastructure) i.e. for electronic authentication via digital signatures. This will avoid cyber space crimes and don't let anybody unpunished.

To increase the use of internet, our government has taken various steps to reduce cost and offer attractive plans for corporate and end users with high speed communication services getting increased day by day based on the demand. This will drive e-commerce transactions to huge growth in e-Retailing sector.

For goods or services delivered still there are few confusions in customs duty, State and central sales tax, VAT, excise etc., This has to be clearly spell out by the government.

To make e-commerce successful on regional level, we require mutual trust worthy environment. All the countries are having independent and separate Legal Framework in place. To enable mutual recognition of various countries Legal Framework, an International Legal Framework is necessary. Electronic commerce security planning and management calls for identification of the users, better risk assessment and evaluation, application specific security identification, better and appropriate network security policies, information resources protection, better security management policies, retransformation and re-skilling human resources in terms of identifying roles and responsibilities and improving physical and environmental security.

The trans-border data flow also cause serious concerns about authorization control, better audit trails, the country's legal laws and secure technology restrictions for developing nations, calls for supporting e-laws, better consumer education, better network management, cooperative regional and multilateral agreements between nations.

The delivery mechanisms and transportation should be tuned with appropriate modernization of clearing services of goods and products within and across the nations.

Other difficulties associated with the IT Act relate to the cyber crimes which are not fully covered are an area of concern for the growth of e-commerce. In this context it is also argued that Law Enforcement Agencies are not fully equipped and trained to deal in cyber crimes. Safeguards to protect privacy of personal and business data collected over the Internet are not covered under the Act. Also the IT Act is silent on the issue of protection of intellectual rights (patents, trademarks, copyrights) including domain names. Finally, payment gateways have to evolve to a level that inter-bank settlement should be enabled through Real Time Gross Settlement (RTGS).

These are some of the barriers that have been identified and have to be overcome, in addition to achieving higher Internet and PC penetration, for the growth of e-commerce.

Despite all these economical, political and social situations, Indian Retail Sector is growing and becoming huge. Here is a list of top retailer in India. Day by day the list is growing and there is a heavy competition in improving their operations and service to customers.

- Lifestyle
- RPG Retail
- Pantaloon Group
- Provogue
- Reliance Fresh
- Globus
- Reliance World
- Spencer's Retail
- Trent (Westside)
- Crossword

5. INTERNET MARKETING FOR E-RETAILING / SEARCH ENGINE OPTIMIZATION

Around the world all organizations have their websites; few of them generate more visibility and revenue.



For a web store / e-Retailing site, we need to study the business and marketing goals, and then pick / find the best keywords matching the products and services listed in our website.

Based on the Keyword analysis we need to build quality unique content for the store which will make the store to gain good ranking among the search engines. While publishing the content blended with product listing, we need to ensure that competitor web store strategies are analyzed and considered.

Now it's the time to plan for the sitemap, which is all about when a visitor is browsing our site, they should feel easy to navigate to all pages of the site without any difficulties. On the other side the site navigation should be developed as a RSS feed which is search engine friendly i.e. the site map will be read by the search engine crawler and got indexed, which results in good search results.

After building the sitemap, we start building the static and dynamic web pages with unique content. Each page should be optimized (On page optimization) so that search engine ranks the page; on completing this process. We need submit our site URL / sitemap feed to all popular search engines viz., Google, Yahoo, MSN etc.,

After submitting the site, we need to have plans to index our site in popular directories, classified sites. And then start indexing in social book marking sites.

Now a days the most popular sites Face book, Linked in and Twitter were few and there are 1000's of other book marking sites, in which we need to update our store information in relevant categories or Tags.

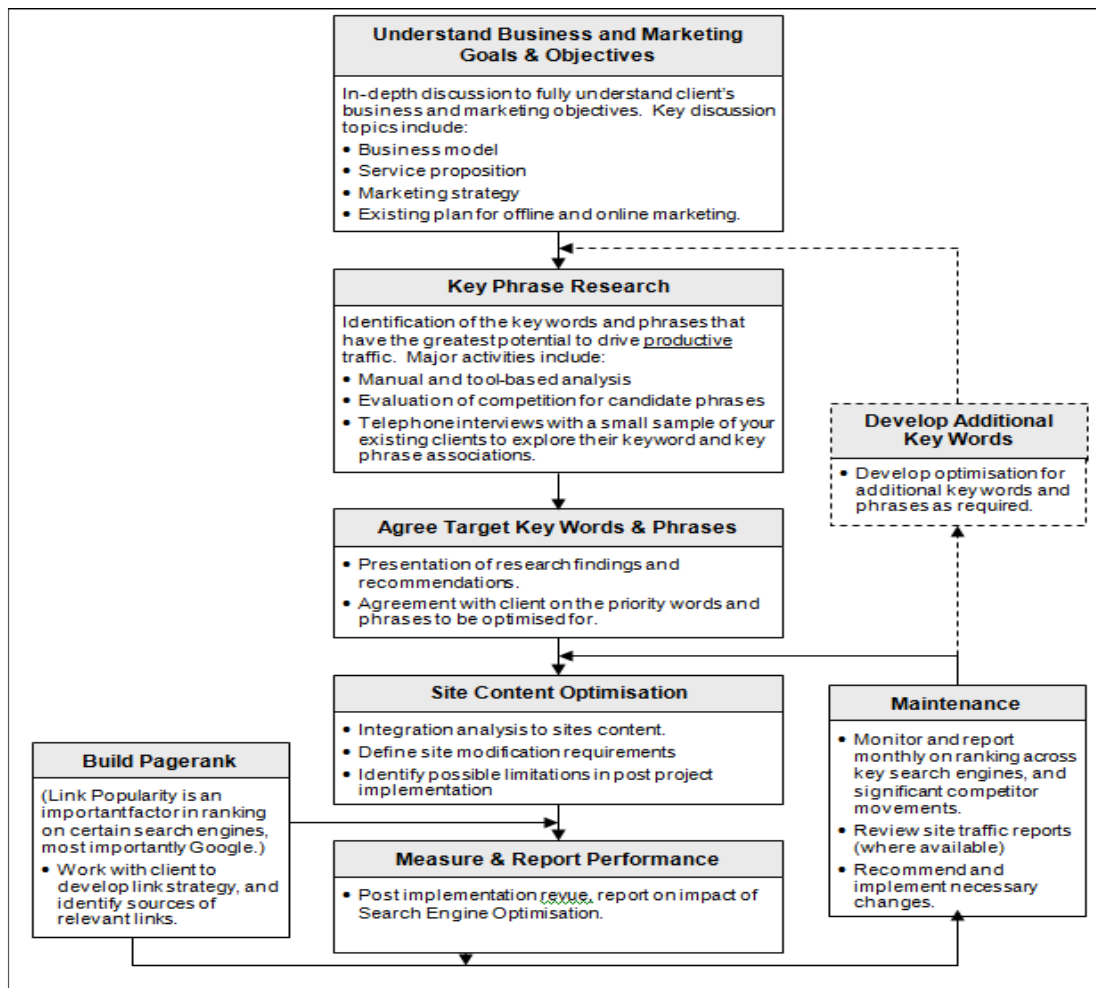
There are few sites which offers code snippet e.g. www.addthis.com by which we display links which will make the visitors to index a specific page to all popular social book marking sites, then email this page to friend, link to face book and twitter...

While doing this book marking, another unique promotional activity is to create blogs for the site and submit n. number of articles about our site / products / services in www.articlebase.com, www.ezinearticles.com and many others. This will also drive more inbound traffic to our website.

Beyond this Link exchange (inbound / outbound links) to our site will decide our page ranking i.e. our site is listed in 1st search result page of Google, Yahoo and MSN and others.

To ensure maximum success, we need to review the above processes often and keep on working will be a proven organic search engine optimization work; which will bring in more traffic to our website.

By implementing free Google Analytics in our site, we can generate excellent SEO report as and when required and be updated with our effort vs. results. Below process will elaborate further on the same with key information's.



6. E-RETAILING INITIATIVE QUESTIONNAIRE

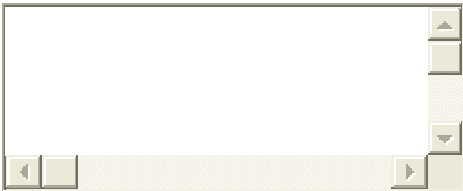
I was thinking from an organization point to view on how to start with an e-Retailing web site initiative as discussed above in section 3, find below the questionnaire to be filled out and then discuss with the IT company to progress further.

Web Development Questionnaire

Contact Information

Your Name (required)	<input type="text"/>
Your Email Address (required)	<input type="text"/>
Company Name	<input type="text"/>
Address	
Contact Address	
Project Budget	<input type="text"/>
Purpose of Website	<input type="checkbox"/> Informational <input type="checkbox"/> Direct Sales (shopping cart) <input type="checkbox"/> Indirect Sales
Will you be providing the copy (text) for the web site?	<input type="checkbox"/> Yes <input type="checkbox"/> Partial <input type="checkbox"/> No
Will you be providing graphics/logos for the web site?	<input type="checkbox"/> Yes <input type="checkbox"/> Partial <input type="checkbox"/> No
Additional Multimedia? (check all that apply)	<input type="checkbox"/> Flash <input type="checkbox"/> Animated Images <input type="checkbox"/> Streaming Audio <input type="checkbox"/> Streaming Video

Site Maintenance. How often will site need to be updated?	<input type="radio"/> Daily <input type="radio"/> Weekly <input type="radio"/> Monthly <input type="radio"/> Only As Needed
Do you need the ability to update the content of your site yourself? (Content Management System)	<input type="radio"/> Yes <input type="radio"/> No
Description of the web site (number of pages; brief description)	<div style="border: 1px solid #ccc; height: 80px; width: 100%;"></div>
Additional Features (check all that apply)	<input type="checkbox"/> Shopping Cart <input type="checkbox"/> Photo Gallery <input type="checkbox"/> Forum <input type="checkbox"/> Classified Ads <input type="checkbox"/> Blog <input type="checkbox"/> Search
Reference Sites. Please list some web sites we can review to get a better understanding of the site you have in mind	<div style="border: 1px solid #ccc; height: 80px; width: 100%;"></div>
Project Deadline (approx)	<div style="border: 1px solid #ccc; height: 30px; width: 100%;"></div>
Contact me by	<input type="checkbox"/> Phone <input type="checkbox"/> Email

Contact Phone/Best Time To Contact	
---	--

Business Website Development Questionnaire

The purpose of this document is to provide Planet Media with a basic outline for determining your website design, Development and online marketing objectives. If certain items are not applicable, please leave them out however; please be as complete as possible. Our goal is to fully understand your project requirements and provide the Optimum solution to make your project a success.

Goals of website

What are the primary goals of the site? (Check all that apply)

- ☐ To increase public awareness of your company's name, brand, or identity
- ☐ To strengthen your position in the marketplace
- ☐ To develop a list of qualified prospects
- ☐ To gain an increase in sales
- ☐ To sell products directly taking credit card information over the Internet
- ☐ To make product information available to customers and/or distributors
- ☐ Others (describe below)

Who are the primary and secondary audiences? What types of people do you want to attract? (Describe interests, Needs, skills, age range, income, geographic location, and lifestyles. What motivates this audience?)

What's the key message you want the site to communicate? What is the second most important message? Please explain why this message is important.

Existing content or new? (Who will be providing this content? will it be new, re-purposed, or both?)

What information will change? (How often will it change? How extensively)

What existing images and photos are available? (Are the images digital, do they need to be scanned? Or is everything going to be created new?)

What outcome will make this project successful? How will you measure that the site is successful?

How have you advertised in the past? What medium? Was it successful?

Please describe your products and/or services.

Compare your products or services to the competition. Why are your products better? Why do people choose your products over the competition?

What are your plans to promote the site? (Check all that apply)

☐ Networking

☐ Referrals

☐ Printed directory listings

☐ Magazine/newspaper

☐ Direct mail

☐ Telemarketing

- ☐ Email
- ☐ Search engine and directory listings
- ☐ Search engine advertising e.g. Google Ad Words or Overture
- ☐ Other

List your competitor's websites. What do you like about them? Describe how your company is different than the Competitor:

Please list 3 favorite websites, for whatever reason. Briefly describe why you like them:

What content do you want in your site? (Check all that apply)

- ☐ List of products or services
- ☐ Product or service catalogue including details for each item
- ☐ Ordering facility
- ☐ Payment facility
- ☐ booking facility
- ☐ Calendar or diary
- ☐ Information about the business – its history and structure
- ☐ Client list
- ☐ Testimonials
- ☐ Case studies
- ☐ Project portfolio
- ☐ Helpful hints or trade secrets
- ☐ Articles
- ☐ User guides
- ☐ Contact details
- ☐ Inquiry form
- ☐ Mailing list subscription form
- ☐ How to find us instructions and/or map
- ☐ News
- ☐ Newsletter subscription
- ☐ Press releases
- ☐ What's new on the web site
- ☐ Links to other relevant web sites
- ☐ A directory of businesses
- ☐ Search facility
- ☐ Downloadable white papers or forms (PDF)
- ☐ E-books
- ☐ Message board or discussion forum
- ☐ Chat room
- ☐ Blog
- ☐ Audio or video
- ☐ Password protected pages for clients/members only
- ☐ Job vacancies
- ☐ Job application forms
- ☐ Third party advertising
- ☐ Other

Additional Considerations: (check all that apply)

- ☐ Content Management
- ☐ Database design or management
- ☐ E-commerce or online shopping
- ☐ E-learning or online classes
- ☐ Online Order Forms
- ☐ Animated Graphics
- ☐ Audio
- ☐ Video
- ☐ Flash/Shockwave Animation

Marketing and Search Engine Optimization: (check all that apply)

- ☐ Registration with the top search engines
- ☐ Pay per Click Advertising (Google Ad Words)
- ☐ creating an e-mail newsletter

If you are redesigning your existing web site, what is the current URL?

http://

Type of Website

☐ Business

☐ Personal

Purpose of Website

☐ Informational

☐ Direct Sales (shopping cart)

We appreciate you taking the time to complete this form. It will prove in valuable to us in providing an accurate picture of your web development requirements

E-Retailing web site Project Planning



Input

Online Text and voice chat, recorded telephone conversations, Mails, scanned images and supporting docs by the Client, Discussions Notes, Model sites/applications etc.,

Process

Business Need & User Need Analysis

Output

1. Work plan
2. Cost involved
3. Team requirements
4. Domain Name finalization
5. Web space provisioning or Own Hardware-software requirements
6. Payment gateway for ecommerce
7. Any other third party tools
8. Supporting documents and
9. The approval
10. Web Site / Page Design
11. Web development
12. Pilot & Testing
13. Promotional plans
14. Site Launch
15. Maintenance and Support.

7. CONCLUSION & FUTURE WORK

Now that we have reviewed all basic information about e-Commerce specific to e-Retailers and the challenges, advantages and disadvantages. From the government point of view, it has to take effective steps to resolve all barriers or disadvantages for e-commerce growth create opportunities for private, public participation in infrastructure development.

Similarly all our public organizations should plan ahead to train our Indian business community to learn more about the future business opportunities to compete global competition and towards our countries growth.

My future study is to plan, research and come out with strategic plans which are more realistic, easy to adopt and implement across the country which will resolve most of the prevailing issues.

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Institutional Investors Heterogeneity And Earnings Management: The R&D Investment Strategy

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Abstract

This study examines the association between different institutional investors' ownership and earnings management practice through R&D expenditures. It investigates this relationship for a sample of 123 US firms. We examine also the effect of institutional ownership on earnings management of firms having different information environment (S&P 500 versus non S&P 500). Results show that while investment funds exacerbate earnings management by encouraging managers to limit R & D expenditures, pension funds and banks follow passive behaviors. Moreover, the hypothesis of the relevance of the environment information in the explanation of the institutional investors' behavior seems to be important in our case.

Keywords: Institutional Investors, R&D, Earnings Management

1. INTRODUCTION

Focusing on previous studies, we found that discretionary accruals are used as almost the only measure of earnings management. In fact, researches do not take into account the fact that managers often cut R & D expenditures to manage results. Indeed, the R & D investment is considered long-term in report with its payback. In addition it's associated with a high degree of failure. Therefore, managers adjust its level depending on their goals and preferences. In this work, we use the level of R & D expenditures as a measure of earnings management.

However, a party appears to have a privileged position to cause change: institutional investors. These investors have influenced the strategic decisions of the firms. But, what influence do they have in the particular field of R & D? Do they really have the keys to limit the managerial myopia which is associated with earnings management? Nevertheless, most studies of institutional investors treat them as a homogenous group ([45] Wahal and Mc Connell 2000, [16] Gillan and Starks 2000...). Nevertheless, institutional investors are different from each other. Indeed, three main factors may explain their heterogeneity.

First, their investment horizon can vary from short to long term. We often talk about short-term and long term oriented institutional investors ([7] Chen et al 2007). Thus, according to [6] Bushee (1998) and [11] David et al (2001), the investment horizon of pension funds is long term. However, the investment funds have a short term investment horizon ([5] Bhattacharya and Graham 2007, [44] Tihanyi et al 2003).

Then, the structure of the participation of institutional investors in firm's capital. Indeed, [1] Alexander et al (2007) believe that ownership concentration is associated with an active role of institutional investors.

Finally, the business relationships that can attach institutional investors with managers. [7] Chen et al (2007) reveal the case of banks that are able to play a dual role in the company (shareholder and creditor). The fear of the breakdown of their position as a creditor explains their passive role.

Thus, institutional investors have different investment horizons and motivations ([5] Bhattacharya and Graham 2007, [44] Tihanyi et al 2003). Therefore, their influence on the maneuvers of leaders is different. A major contribution of this study is that it examines how different types of institutional investors, who have different strategies, influence managerial behaviors. In addition, we think that previous studies neglect the role of the information environment of firms in explaining the behavior of institutional investors. Our study assumed an influential role of the information environment on the behavior of institutional investors. In fact, companies that belong to the S & P 500 stock index are generally of great size, use the services of highly experienced analysts and are subject to effective control by the different stakeholders ([35] Mitra and Cready 2005). Therefore, the behavior of institutional investors appears to be different in these firms ([46] Zouari and Rebaï 2009). The study of the information environment is an important contribution of our research to the existing literature. The remainder of the paper is organized as follows. The next section gives a literature overview on the role of some institutional investors on earnings management through

R&D investment. Section 3 presents data base and variables description. The panel regression results are presented in section 4. Section 5 concludes. Section 6 gives the references.

2. LITERATURE OVERVIEW

Although previous researches show the important role of institutional investors in the R & D investment strategy, however they ignore the differences in the characteristics of institutions. Institutional investor's characteristics seem to be crucial in explaining their preferences for this strategy. [6] Bushee (1998) classifies institutional investors into three groups according to their degree of influence on the earnings management by managers. He noted in this context that the pressure for short-term investment is generated by short-term oriented institutional investors. They usually have a small capital in several companies. Thus, the presence of this type of institutional investors is generally associated with the earnings management through R & D expenditures.

Contrary to the short term oriented institutional investors, [6] Bushee 1998 and [40] Porter 1992) show that large institutional investors or "dedicated", which are generally present in Japan and Germany, relieve the pressure for short-term investment. Indeed, they owned large parts of capital in a limited number of companies. The concentration of ownership by large institutional investors limits managerial myopia and therefore earnings management through R & D.

The third group proposed by [6] Bushee (1998) and [40] Porter (1992) is formed by the "quasi-indexers". They represent smaller institutional investors with no influence on managerial decisions. In fact, because of their limited participation, they are unable to access to the information needed to evaluate the long-term performance of the firms in which they invest (high cost of information).

In what follows, we focus on the explanations supporting the hypothesis that institutional investors behavior concerning the R & D expenditures varies with the characteristics and preferences of each institution. We distinguish three types of institutional investors: pension funds, investment funds and banks.

2.1. Pension Funds

The investment horizon of pension funds is long term. In fact, according to [17] Gilson and Kraakman (1991), these funds retain their holding in the company for more than one decade. This interest for the long term is justified both by the nature of the compensation of fund managers, generally based on salary (not related to the performance achieved) and the need to ensure the pension payments ([13] Del Guercio and Tkac 2000). In this sense, [4] Bethel and Liebeskind (1993) stipulate that pension funds have an obligation to protect the capital of their customers. To this end, the pension funds are obliged to exercise disciplinary influence on the firm's managers ([6] Bushee, 1998 and [11] David et al 2001).

In this context, [43] Smith (1996) and [12] Davis and Thompson (1994) show that the concentration of ownership by pension funds is positively associated with the innovation strategy of the firm. Similarly, [11] David, et al (2001) suggest that pension funds prefer investing in R & D because they have a long-term investment horizon. [23] Hitt, et al (2001) affirm that pension funds abandon the investment in external innovation (acquisition of technologies already tested). As such, [24] Hoskisson et al (2002) establish a positive relationship between the pension funds ownership and R & D investment. Hence the following hypothesis:

H1 pension funds limit earnings management through cutting R & D expenditures

2.2. Investment Funds

Investment funds are short term oriented. Their possession is about one year ([17] Gilson and Kraakman 1991). Indeed, contrary to the pension fund managers, managers of investment funds are subject to performance constraints required by their superiors. As such, [2] Badrinath and Wahal (2002) and [25] Khorana (1996) believe that the internal compensation system of these investors is based on the quarterly performance level of their holdings. Thus, fund managers are replaced each time the result reached by the company is inadequate. In addition, clients of investment funds are individual investors, who are based in their investment decisions on short-term information collected from newspapers and magazines ([13] Del Guercio and Tkac 2000). Therefore, the short-term horizon of these investors leads them certainly to restrict R & D investment. Indeed, [24] Hoskisson et al (2002) affirm that when the main objective of the investment fund is to achieve a high level of profitability in the short term, they prefer the acquisition of external innovations. The latter emit a high immediate return because the products are already proven. They limit internal and long term innovation such as R & D. Hence the following hypothesis:

H2 investment funds incite managers to cut R & D expenditures and so increase earnings management

2.3. Banks

In United States, the Bank Holding Company Act of 1956 prohibited U.S. banks from holding more than 5% of the same company and requires them not to get involved in the firms management. This situation limits both the ability of banks to monitor managers of firms in which they invest ([42] Prowse 1990) and their ability to invest in R & D. However, today the situation is different. Indeed, the U.S. government has

avoided the obstacles placed in the shareholding by banks. As a result, the U.S. banking institutions have become more active. According to [27] Kroszner and Strahan (2001), banks may find it advantageous to limit the risk of the firm because they preserve the interests of the organizations they represent. However, R & D projects are inherently risky and do not seem to be consistent with the objectives of the banks. For [3] Bah and Dumontier (2001), the highly leveraged firms reduce long-term investments such as R & D to ensure their commitments (payment of principal and interest of the debt). Moreover, in the case of risky and specific investments such as R & D, debt financing is associated with higher agency costs. Similarly, [19] Grinblatt and Titman (1998) suggest that high leveraged firms attempt to limit investment in long term projects such as R & D. Hence, the following hypothesis:

H3 banks increase earnings management through limiting R & D spending

3. DATA BASE AND VARIABLES DESCRIPTION

3.1. Data

The sample used in our study is composed of data carrying on firms of the American economy detected from the company's yearly reports distributed by the Security and Exchange Commission. From an initial sample, we eliminated the financial firms and insurance companies as well as firms whose data are missing or the yearly reports are distributed for less than three consecutive years. Our final sample is limited to 123 American firms for the period from 2003 to 2005: 43 firms belonging to the S&P 500 stocks and the others don't belong to the S&P 500 stocks.

3.2. Variables Description

Our study seeks to link the level of R & D investment to institutional ownership. We inserted four control variables: managerial ownership, debt ratio, performance and firm size.

3.2.1. The Dependent Variable: R & D

The dependent variable is R & D, defined as a proportion of company sales. This measure is widely used in previous research ([20] Hansen and Hill 1991, [6] Bushee 1998, [45] Wahal and Mc Connell 2000, [24] Hoskisson et al 2002 ...). In contrast to the other measures, the percentage of R & D of the total sales has the advantage of taking into account the effects of inflation.

3.2.2. The Control Variables

- Managerial ownership is defined as the proportion of capital held by managers. Although investment in R & D seems to be in the interests of shareholders (to improve future results), it is often not optimal from the perspective of managers. However, managerial ownership can align the interests of managers with those of shareholders. We therefore expect a positive relationship between managerial ownership and R & D investment.
- The debt ratio is measured as total debt divided by total assets. In the case of a lack of internal financial resources, the company uses debt. However, most studies in this context conclude that R & D financed by debt creates three major problems. First, the risk of asset substitution increase with the risk of investment projects ([3] Bah and Dumont 2001). Second, highly leveraged firms reduce long-term investments such as R & D to ensure their commitments (payment of principal and interest on the debt). Finally, in the case of risky and specific investments such as R & D, debt financing is associated with higher agency costs. We therefore expect an inverse relationship between leverage and the level of R & D expenditure.
- Performance is measured as earnings before interest and taxes divided by total assets. The main advantage of this measure is that it covers all activities of the company. ROA has been used by many researchers such as [36] Nager et al (2000). Several authors show that the firms' ability to innovate depends on the extent of its performance ([20] Hansen and Hill 1991, [26] Kochhar and David 1996, [9] Cho 1998, [3] Bah and Dumontier 2001...). Therefore, the performance must be positively correlated with R & D investment.
- The size is measured by the logarithm of total assets. Indeed, there is often a category of innovative projects that can be only adopted by large firms because of the huge funds required for these types of investments. Thus, the larger the company, the greater the R & D expenditures will be high.

3.2.3. Information Environment Hypothesis

[21] Hessel and Norman (1992) as well as [10] Cready (1994) show that in opposition to the individual investors, the institutional investors have a preference for the investment in the big firms. [28] Lang and Mc Nichols (1998) stipulate that the positive relation between the institutional involvement and the size of the firms essentially drifts to the legal constraints and the relatively important transparency level in the big businesses. Nevertheless, these firms are submitted to more of control on behalf of the different taking parts and resort more than the others to financial analyst services. In this order of idea, [34] Mitra (2002)

considers that firms that belong to the S&P 500 stocks have a more elevated stock capitalization and a more important transparency level in contrast with non S&P 500 firms. The informational environment of firms belonging to the S&P 500 stocks is supposed more rigorous in comparison with to the one of the other firms. We think that the influence of the institutional investors on managerial latitude concerning earnings management varies depending on whether the studied firms belong or no to the S&P 500 stocks ([46] Zouari and Rebaï 2009).

3.3. Estimation Method

We focus on panel data. The study period is from the year 2003 to 2005. One possible estimation methods is the method of least squares (OLS). This estimate assumes that all parameters are identical. The model would be consistent. However, the risk of sample heterogeneity exists, making biased estimates by OLS. So we adopt an estimation based on panel fixed and random effects.

4. PANEL REGRESSION RESULTS

4.1. The Impact Of Different Institutional Ownership On The R & D Expenditures Manipulation

We specify the following econometric equation:

$$RD_{it} = \alpha_0 + \alpha_1 INSD_{it} + \alpha_2 PFP_{it} + \alpha_3 PFI_{it} + \alpha_4 PBQ_{it} + \alpha_5 INSD_{it} + \alpha_6 DET_{it} + \alpha_7 ROA_{it} + \alpha_8 LTA_{it} + u_{it} \quad (1)$$

With;

RD: the proportion of R & D expenditures on total company sales;

PFP: the pension funds ownership;

PFI: the investment funds ownership;

PBQ: the banks ownership;

INSD: managerial ownership;

DET: the total debt of total assets;

ROA: earnings before interest and taxes divided by total assets;

LTA: the logarithm of total assets;

$\alpha_i, \beta_i, \delta_i$: the model parameters to estimate;

u, v, w : error terms.

The results of the equation (1) regression by the panel fixed effects method are presented in the following table:

Table 1: Regression results of equation (1)

Dependent variable: R & D

Explanatory Variables	Coefficients	(T-Student)
Constant	-0.507	-3.03
PFP	-0.00058	-0.20
PFI	-0.0019	-2.67 ***
PBQ	-0.0013	1.30
INSD	-0.0018	-2.07 **
DET	-0.085	-1.29
ROA	0.076	1.11
LTA	0.041	3.42 ***
Within R ² = 0.12 Between R ² = 0.03 Overall R ² = 0.08	Hausman = 37.50 Prob = 0	F = 2.90 Prob F = 0

(T-Student)

(*) Indicate significance at the 10%

(**) Indicate significance at the 5%

(***) indicate significance at the 1%

4.1.1. Role Of Pension Funds

Despite their activism and their long-term horizon, pension funds do not significantly affect the level of R & D investment. We reject our hypothesis that pension funds are interested in encouraging the managers to invest in R & D. Indeed, fund managers of these institutions find that monitoring costs may be incurred by various stakeholders that have a disciplinary role on managers. So they prefer to follow a passive behavior. Therefore, we invalidate the result found by [11] David et al (2001) which suggest that pension funds prefer investing in R & D because of their long-term horizon and ignore the investment in external innovation. About the effectiveness of the activism of pension funds, we can provide that control by the pension fund may be ineffective because of agency problems between managers of pension funds and other shareholders of the firm. These problems reduce the ability of these funds to exercise effective control. Moreover, the free rider problem can lessen the pension funds incitation to control the firm's managers. Indeed, some pension funds have a small amount of shares but bear all the costs of activism. While all shareholders benefit from this activism.

4.1.2. Role Of Investment Funds

Investment funds have a negative impact on the level of R & D investment. We confirm our hypothesis that investment fund limit R & D expenditures and thereby aggravate earnings management. Indeed, [24] Hoskisson et al (2002) affirm that when the main objective of the investment fund is to achieve a high level of profitability in the short term, they prefer the acquisition of external innovations. The latter emit a high immediate return because the products are already proven. In addition, Investment funds do not establish a business relationship with the firm in which they invest their funds. This independence from the firms, incite them to orient managerial decisions.

4.1.3 Role Of Banks

Like pension funds, banks do not exert a significant influence on the level of R & D expenditures. We reject our hypothesis that banks encourage managers to limit R & D investment and thereby aggravate earnings management. The passivity of these institutions may be the result of collision issues with the firm's managers. Indeed, bankers often try to not oppose managerial decisions in order to not break their position as creditors. So, they are more supportive of management actions. Thus, the dual role of banks (shareholders and creditors) can weaken the effectiveness of their control on managers. Infact, if a bank holding equity is primarily interested in ensuring the service of its outstanding debts, this would conflict with shareholders interest.

4.1.4. The Control Variables Effects

The managerial ownership variable has influenced negatively the level of R & D expenditure. This result shows that managers are short term oriented. They protect themselves against the threat of takeover. Indeed, in order to attract and attach some big investors to the capital of the firm, the manager as shareholder is incited to adopt income increasing behavior. Regarding debt, the variable "DET" doesn't affect R & D investment. In fact, the decision of R & D investing doesn't appear to be related to the leverage of the firm. Similarly, the company's performance did not influence the level of R & D expenditure. Thus, we invalidate our assumption that the firm' ability to innovate depends on the extent of its performance ([20] Hansen and Hill 1991, [26] Kochhar and David 1996, [9] Cho 1998, [3] Bah and Dumontier 2001...). Indeed, the innovative capacity of the firm is unaffected by the level of performance. Concerning the influence of the size on the level of the R & D spending, we confirm our hypothesis. In fact, "SIZE" has a significant positive effect on the level of R & D investment. This result derives primarily from the ability of large companies to cover the costs associated with R & D investment.

4.2. The Impact Of The Informational Environment Of Firms On Institutional Investor's Behaviors

4.2.1. The Firms Surveyed Belong To The S & P 500 Sstock Index

We specify the following econometric equation:

$$RD_{it} = \beta_0 + \beta_1 INSD_{it} + \beta_2 DET_{it} + \beta_3 ROA_{it} + \beta_4 LTA_{it} + \beta_5 PFP_{it} + \beta_6 PFI_{it} + \beta_7 PBQ_{it} + v_i \quad (2)$$

The regression results of equation (2) by the panel random effects method are presented in the following table:

Table 2: Regression results of equation (2)
Dependent variable: R & D

Explanatory Variables	Coefficients	Z
Constant	0.044	0.71
PFP	-0.0041	-0.98
PFI	0.0011	1.79 *
PBQ	-0.0017	-0.74
INSD	0.00017	0.24
DET	0.032	0.57
ROA	0.235	2.68 ***
LTA	-0.0024	-0.63
Within R ² = 0.10 Between R ² = 0.11 Overall R ² = 0.10	Hausman = 9.54 Prob = 0.2159	F = 2.04 Prob F = 0.0031

Z

(*) Indicate significance at the 10%

(**) Indicate significance at the 5%

(***) indicate significance at the 1%

4.2.2. The Firms Surveyed Are Not Belonging To The S & P 500 Stock Index

We specify the following econometric equation:

$$RD_{it} = \delta_0 + \delta_1 INSD_{it} + \delta_2 DET_{it} + \delta_3 ROA_{it} + \delta_4 LTA_{it} + \delta_5 PFP_{it} + \delta_6 PFI_{it} + \delta_7 PBQ_{it} + w_{it} \quad (3)$$

The regression results of equation (3) by the panel fixed effects method are presented in the following table:

Table 3: Regression results of equation (3)
Dependent variable: R&D

Explanatory Variables	Coefficients	(T-Student)
Constant	-0.63	-3.33
FPP	0.0069	2.37 ***
PFI	0.0013	1.57
PBQ	-0.0018	-1.73 *
INSB	-0.001	-1.58
DET	-0.009	-0.11
ROA	0.06	0.74
LTA	0.0052	3.65 ***
Within R ² = 0.16 Between R ² = 0.07 Overall R ² = 0.03	Hausman = 28.05 Prob = 0.0002	F = 3.46 Prob = 0

(T-
(*)

Student)
Indicate

significance at the 10%

(**) Indicate significance at the 5%

(***) indicates significance at 1%

4.2.3. The Changing Of Informational Environment Results Analysis

The estimation of equation (2), where firms belong to the S & P 500 stock index, shows no significant relationship between the dependent variable "RD" and the participation of pension funds and banks in the firm's capital. However, investment funds have a positive influence. Nevertheless, the estimation of equation (3), for firms that do not belong to the S & P 500 stock index, shows that investment funds do not significantly affect the level of R & D investment. In contrast, pension funds positively affect the R & D investment and banks' influence is negative. Thus, the information environment hypothesis is confirmed in the case of the three institutions studied. For banks, the observed passive behavior can be explained by their generally established business relationship with the managers. Indeed, banks often act as a creditor in addition to their investment relationship with the firm. To protect their position as creditor, they are trying to not oppose managerial decisions. Similarly, for pension funds, their passive behavior appears to be logic for S & P 500 firms. In fact, these institutions prefer to act as a stowaway in firms that belong to the S & P 500 stock index when different stakeholders have control over the managers.

5. CONCLUSION

This paper tries to study the relation between institutional ownership and earnings management through R&D expenditures. The evidence on a panel of American firms observed during the period 2003-2005, shows that while investment funds encourage the managers to limit R & D expenditures, pension funds and banks are passive. The results seem to be surprising for the case of pension funds. Indeed, these institutions do not establish business relationships with the managers. For banks, their passive role seems to be the consequence of their business relationship with managers. In addition, we examine the effect of institutional ownership on earnings management of firms having different information environment (S&P 500 versus non S&P 500). The results show that investment funds encourage investment in R & D in the S & P 500 firms. However, they play a passive role in firms that do not belong to this index. Similarly, pension funds and banks have different behaviors on R & D investment strategy for the two categories of firms (S & P 500 and non S & P 500). Thus the informational hypothesis is verified for the three institutions studied.

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Methodology and Evaluation of Entrepreneurship Courses

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Abstract

Creating a new business is a process. However, there is no magic programme that will guarantee you a new successful business. The process of creating a business is highly stochastic (not all business ideas make it) and iterative (based on what you learn as you proceed, you will likely have to modify your thinking and repeat parts of earlier steps). This paper explores the role of academics in this process, the economic literature related to entrepreneurship education, and the main results from the (virtual) pilot course on entrepreneurship, as organized by Universidad Nacional de Educación a Distancia (UNED) in the project Cross Border Virtual Entrepreneurship (CBVE). This CBVE project has been co-funded by the Lifelong Learning Programme of the European Commission under the Erasmus strand: Cooperation between Universities and Enterprises.

Keywords: Flexible, Open and Distance Education, Entrepreneurship, Virtual Business Planning.

“What we need is an entrepreneurial society in which innovation and entrepreneurship are normal, steady, and continual” (Drucker, 2001).

1. INTRODUCTION

For Europe to realize the Commission’s vision of becoming the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion, the predominating challenge of global competition and demographic change can only be faced by unconventional methods for educating, training and retraining of the European labor force. It is reported though that universities encounter difficulties herein i.e., in effectively responding to the lifelong learning paradigm (Com, 2006; 208). Indeed, a number of conventional universities are still in the strategy of educating traditional student cohorts in the age category of 18-25 without any extended flexibility.

To delineate this would imply that a vast number of potential (lifelong) learners will not get served. Demographics and global competition however make the necessity of reaching those learners very clear (Com, 2005; 24). With the number of learners outside the traditional cohorts to increase, the need to act on the development of their skills is of vital interest to the long-term competitiveness of the Union. Moreover, the necessity is particularly clear whereas it concerns the development of entrepreneurship skills and entrepreneurship competences. Small and Medium sized Enterprises (SMEs) in Europe constitute almost 99% of all enterprises and two thirds of all employment i.e., 75 million jobs (EC, 2006). Entrepreneurship is truly a vital force in

economies of developed countries and developing economies. It is a subject of great importance, placed high upon the agenda of the European Commission. Essentially, entrepreneurship refers to the creation and management of new business ventures by either an individual or a team. Though entrepreneurship is not only limited to new business start-ups, it also includes intra-organizational out-of-the-box thinking i.e., innovative entrepreneurship and associated risk taking, activities particularly contributing to the long term competitiveness of larger organizations.

UNED has been collaborating fruitfully with partners of the European Association of Distance Teaching Universities (EADTU), so as to develop innovative education models, with the objective of enhancing students employability. In 2006, the EADTU started its first collaborative European employability project with UNED, stating the objective to facilitate (distance education) students to enter into online working, stimulate their employability, and provide the associated distance education systems with increased business and market connectivity by means of flexible modality internships. This first project Cross Border Virtual Mobility (CSVM), signaled the launch of a wider European endeavor, in which European projects such as Cross Border Virtual Entrepreneurship (CBVE) (Dorp, April 2008; Dorp, September 2008; Herrero de Egaña, 2007), Cross Border Virtual Incubator (CBVI), and the Employability Clinique, alias I2AGORA, are granted a rightful place.

All initiatives mentioned, are co-funded by the European Commission under the Lifelong Learning Programme i.e., Leonardo da Vinci, Erasmus, and KA4 Multilateral Projects. These projects are executed in collaboration with excellent partners from NL, PL, ES, EE, IT, BE, RO and HU. These partners have proven to be reliable in their collaboration in the field, and as to having their own track record of European projects. This paper will now showcase the Universidad Nacional de Educación a Distancia (UNED) as one of the partners in delivery of flexible modality education, particularly with regard to self-employment education. The UNED will present their CBVE results pertaining to the development and execution of pedagogically-rich master class materials and associated pilot(s) on virtual business planning. Dissemination of intermediate and final results has been done in May 2009, at the CBVE multi-country stakeholder seminar in Leuven (BE), in front of European Commission representation (EACEA), also at the 23rd ICDE World Conference M-2009 in Maastricht, and finally during the ICL 2009 Conference in Villach.

Traditional business programmes have come under increased criticism for failing to be relevant to the needs of today's changing business environment for four main reasons:

- They do not stress the cross-functional complexity of business problems (Solomon, 2007)
- Business school courses are highly structured and do not often pose problems which require novel solutions (Sexton and Bowman, 1984)
- The lack of creativity and individual thinking required (Solomon et al., 1994)
- They are not designed to promote creativity, innovation and self-employment (European Commission Final Report of the Expert Group, 2008)

Business schools are the paradigm of Traditional Business Education. A business school is a university-level institution that confers degrees in Business Administration. It teaches topics such as accounting, finance, information systems, marketing, organizational behavior, strategy, human resource management, and quantitative methods. Traditional business education is designed to meet the needs of well established firms and government institutions. The core management courses offered in traditional business programmes is essential for success in any business career (Block and Stumpf, 1992); but fails in other areas, because there are fundamental differences between business principles applied to new ventures and those applied to large corporations (Davis et al., 1985) and also fails in the challenge "to generate more quickly a greater variety of different ideas for how to exploit a business opportunity, and the ability to project a more extensive sequence of actions for entering business" (Vesper and McMullan, 1988).

Entrepreneurship education programmes exist most generally within established university business schools and should be considered as part of business education, but admitting that is a

different field. Another reason to consider that entrepreneurship education as part of business education is that the origins of entrepreneurship education are linked to Harvard Business School. In 1947 Myles Mace introduced and elective subject in the MBA titled The Management of New Enterprises, the course has remained, in various incarnations, a fixture of the HBS curriculum for decades and is regarded as the foundation of the School's extensive entrepreneurial management programme (Katz, 2003).

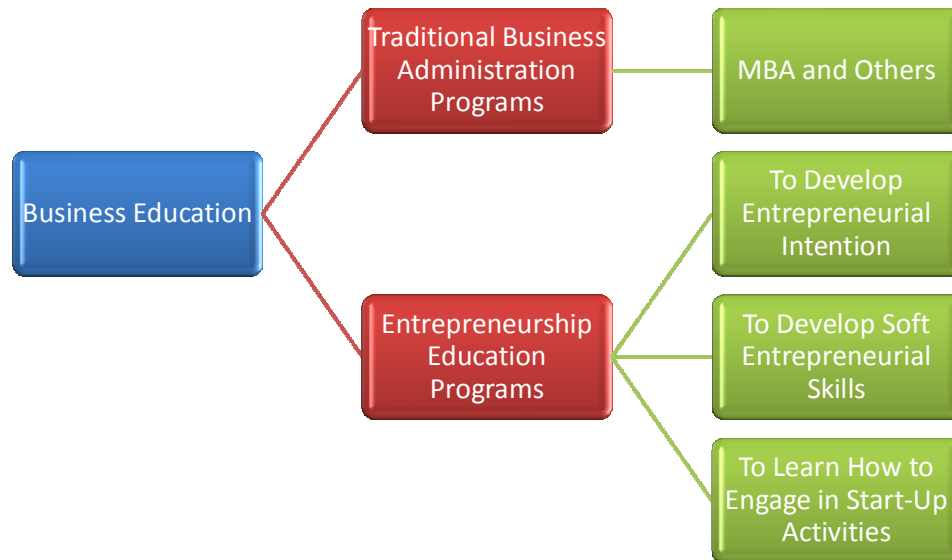


FIGURE 1: Business Education Classification

What makes entrepreneurship education distinctive from traditional business education is its focus on realization of opportunity, where management education is focused on the best way to operate existing hierarchies. Entrepreneurship refers to an individual's ability to turn ideas into action. It includes creativity, innovation and risk taking, as well as the ability to plan and manage projects in order to achieve objectives. (Commission Communication "Fostering entrepreneurial mindsets through education and learning", Com, 2006, 33 final). As the field has been evolving entrepreneurial education, been seen as only about starting up business ventures, has included other questions such as (Solomon, 2007):

- Skill-building courses in negotiation, leadership, new product development, creative thinking and exposure to technological innovation
- Awareness of entrepreneurial career options
- Sources of venture capital
- Idea protection
- The characteristics that define the entrepreneurial personality
- Challenges associated with each stage of venture development

According to Fayolle and Klandt (2006), in contemporary entrepreneurship education, entrepreneurship can be viewed from three different angles, namely as a matter of culture or state of

mind, as a matter of behavior, or as a matter of creating specific situations. Education focused on entrepreneurship as a matter of culture/state of mind encompasses those aspects that focus on values, beliefs and attitudes associated with entrepreneurship (i.e. entrepreneurial mindset, spirit or identity). Entrepreneurship education focused on behavior deals mostly with specific skills in relation to entrepreneurial behavior, like seizing opportunities, making decisions and social skills. Finally, entrepreneurship education focused on creating specific situations, concerns the creation of new firms and entrepreneurial situations (e.g. new ventures, corporate venturing). This point of view coincides with that of the Commission (Com, 2008; 33), which classifies entrepreneurship courses in three categories:

- Courses to develop entrepreneurial intention
- Courses which develop soft entrepreneurial skills
- Courses that teach how to engage in start-up activities

Entrepreneurship courses are becoming part of the educational offer of universities of the United States and Europe, but this fact does not mean that currently the teaching of entrepreneurship is yet sufficiently integrated in higher education institutions' curricula (Com, 2008; 33), and that there is consensus on just what exactly entrepreneurship students should be taught. Though there is nothing unusual about this, if we consider that the study of entrepreneurship is still in its infancy at university (Brazeal, 1999), or at least far from maturity (Robinson, 1991).

There are different methodologies, contents and support materials that could be used by entrepreneurship educators to coach students. After analyzing the situation in the United States and in Europe, UNED developed its own model for an entrepreneurship course. In particular we analyze the different predominant methodologies in either area and compare them to the one used at UNED. For entrepreneurship educators, the challenge is to prepare entrepreneurship students to start their new ventures using the right methodology, but entrepreneurship courses, studies and programmes should also provided the students with the possibility of starting their own business. The evaluation of entrepreneurship courses should consider both dimensions.

This paper is organized as follows. The introductory section has briefly summarized the main results, the relevant literature necessary to introduce the problem and explained the paper's significance and contribution to entrepreneurship. In Section 2 we describe the UNED model for entrepreneurship and we highlight what makes the UNED methodology different. Section 3 shows the literature about evaluation methods and compares the UNED methodology with other methodologies in the USA and Europe. Section 4 is devoted to the concluding remarks.

2. METHODOLOGY

This section is divided in two parts: the first one describes the methodologies used in the USA and Europe, and the second shows how the UNED course was organized and the distinctive features about UNED's methodology.

2.1 Methodology in the United States of America and Europe

We have studied the USA and European areas because we believe they have been and are fundamental in the development of the idea of the entrepreneur and because of their predominant role in providing good quality education. There are other parts of the world with a rising and impressive economic weight, but we do not believe that their study could be useful for our purpose because of the fact that their political, economic and educational systems are quite different from a system in which entrepreneurs are indispensable or important; and also, because these kind of societies are far away from that state of the economy, which we call the economy of knowledge.

Figure 2 represents the most popular teaching method in entrepreneurship courses/curriculum in the USA. Figure 3 reflects that of Europe. Figure 4 indicates the most common type of teaching

entrepreneurship courses in Spain. Figure 5 shows a comparison of the most common type of teaching by geographical area.

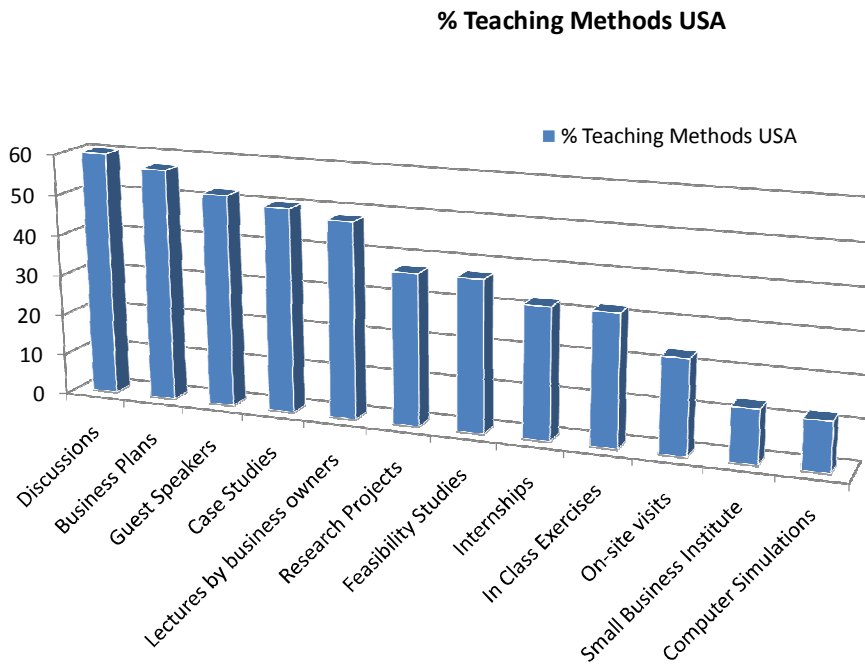


FIGURE 2: Teaching Methods USA

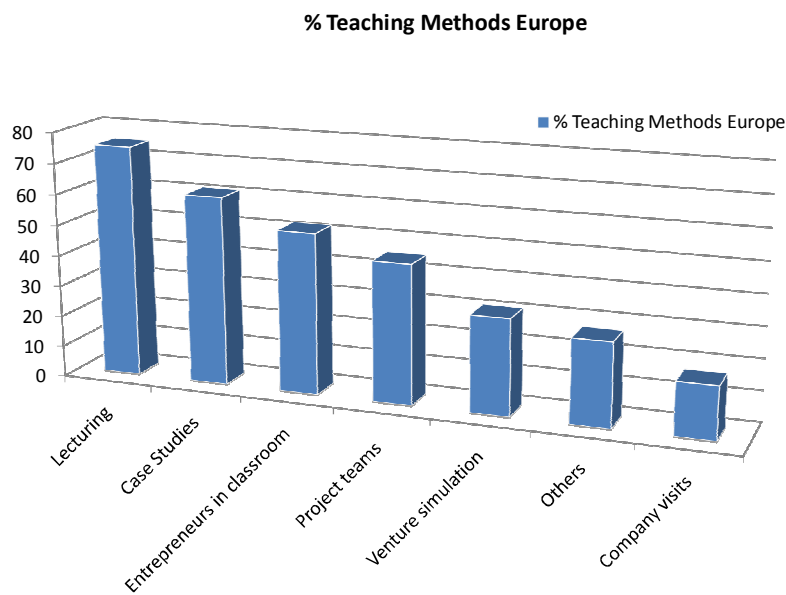


FIGURE 3: Teaching Methods Europe

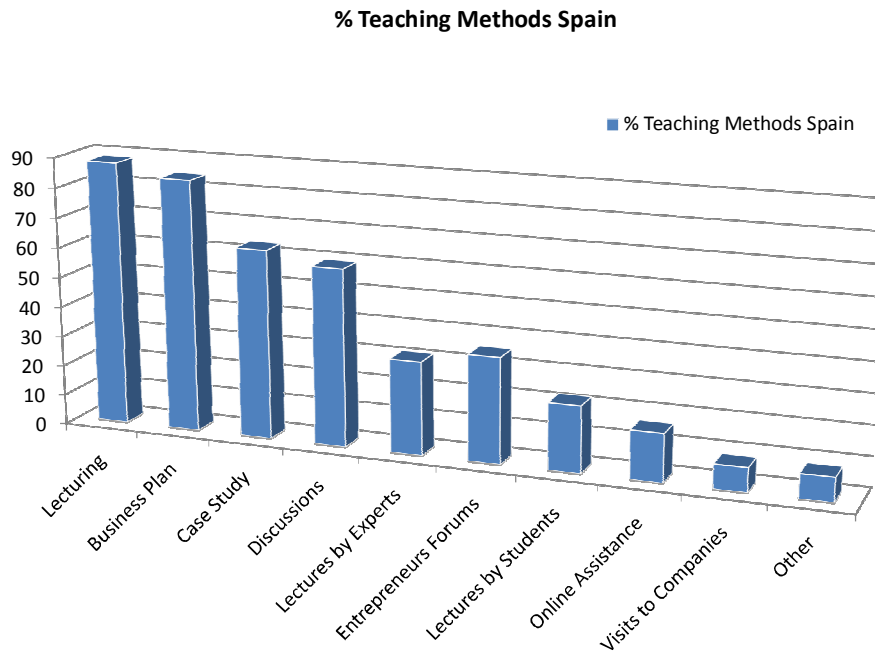


FIGURE 4: Teaching Methods Spain

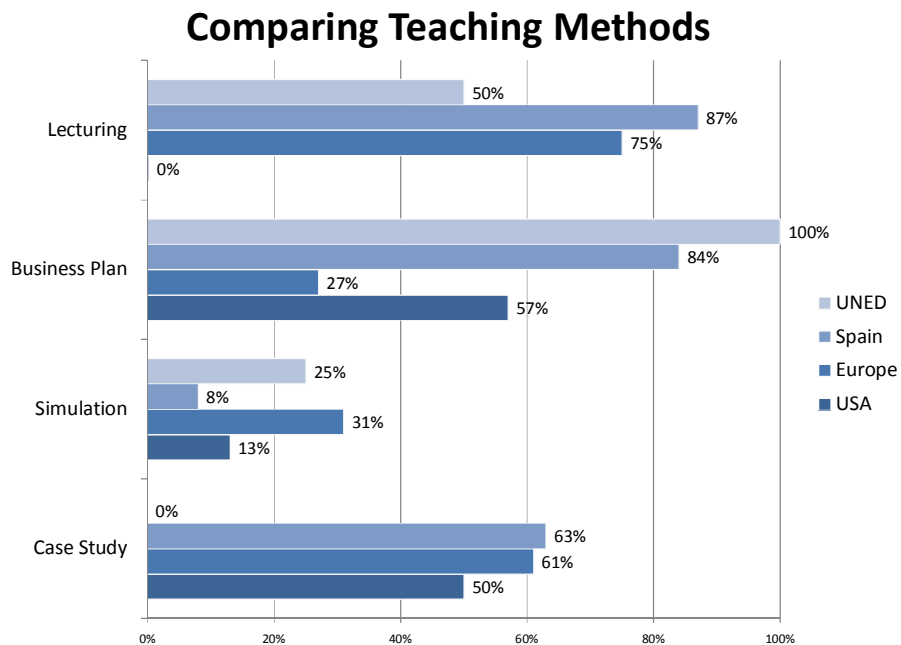


FIGURE 5: Comparison of Methods

The analysis of the 2007-2008 survey indicates that the traditional teaching method of requiring students to create business plans still exists as a foundation for teaching entrepreneurship and small business management. Yet, the data also shows that lecturing and simulation are also popular.

2.2 UNED's Method

The aim was to create a virtual course for business planning, supported by pedagogically-rich master class materials, designed for distance-learning students, and which could guarantee that students would be able to develop entrepreneurial skills, and in some cases competences as well. The course design needed to be different for distance-learning students because of their special (off-campus) features. For example, the traditional business simulation software is particularly designed for on-campus usage, so as to allow for the interaction between instructors and students; in distance education though, this is not always possible. In that case the simulation software would have to allow the student to work alone without the interaction of the instructor.

The core scheme of the course was to train students to be able to develop a Business Plan, which sometimes could lead to new business creation among participants if they join an Administration Programme for Business Creation or if they are capable of obtaining financial support from financial institutions. To qualify for entry, applicants did not require a special qualification. They just needed to have a business idea at feasibility or pre-feasibility stage. The programme was designed for distance and virtual education, thus participants could be employed, unemployed or continuing their education. The total programme duration has been about six months. From the methodological point of view the aim of UNED was to craft a course that could meet the rigors of academia while keeping a reality-based focus and entrepreneurial climate in the learning experience environment (Solomon, 2007; page 169).

The course is divided in three phases. In phase I, students must present the business idea which is evaluated and criticized by the teachers of the course. The students' ability or capability as entrepreneur is subsequently evaluated using a test. In phase II, after the review of the course materials, the student starts the business plan. In this phase, the student seeks advice from the teacher, or from experts and professionals from a particular sector. Once the business plan is finished the teachers evaluate the plan. The teacher either accepts or rejects it. Phase III, commences when the student obtains the report from the teacher. Once the business plan is accepted, the student applies Business Simulation Games to test it profoundly. To complete the business plan, the student communicates his or her results of the simulation in a final report.

So, UNED's course combines the three most common teaching methods. Our course still relies on a lecture method to give students a basic knowledge of the subject: UNED has developed with Uninettuno a Virtual Master Class. Online delivery of the course and computer based materials are part of the teaching strategy. It is now largely accepted that computer-based materials may be used at various levels to facilitate learning. This approach is being adopted for large classes in entrepreneurship education (Cooper, 2007). Recent changes in higher education, the demands of the knowledge society and the increased need for students to become autonomous, reflective e-learners has increased the need for academics to understand the learning process (Webster and Sudweeks, 2006) which is very specific in our case. UNED's course is not designed to teach economy or business management and that is why after a two weeks of lecture about the business plan and some economic and management concepts the student must start developing his business plan.

Of course entrepreneurship methodology often falls in the same trap as that of traditional business education, requiring students to write and present a business plan in teams, offering the illusion or reality of right answers (Bird, 2002; page 210). Sometimes these kinds of courses rely heavily on theory and are nothing but management theory course adjusted to give advice for

entrepreneurship. In many cases, entrepreneurship programmes educate about entrepreneurship rather than educate for entrepreneurship (Kirby, 2003).

Garavan and O' Cinneide (1994) suggest that the best methods suited to an entrepreneurial learning style are active-applied and active-experimentation (Plaschka and Welsch, 1990, p. 62) said that what is needed is a more proactive, problem-solving and flexible approach rather than the rigid, passive-reactive concept and theory-emphasized functional approach". It is true that the business plan by itself does not assure to achieve these objectives and that is the reason for developing the phases approach.

Typically, those persons predisposed to act in an entrepreneurial manner are depicted as possessing certain personality traits including: creativity; easily bored; independent nature; leadership aspirations; risk-taking propensity; self-motivation; and self-realization through action (Chell et al., 1991; McClelland, 1961; Schumpeter, 1934). Clearly such persons are likely to possess an active-oriented learning style, and this is highly relevant when you must design a course. The role of the Master Class continues in this phase and is very useful because it provides the student with links to a lot of documents, resources and knowledge that the student can use when needed: knowledge is useful when deployed in conjunction with a specific problem. Consequently, within the context of the 'learning organization' the student/lecturer relationship is of a highly interactive nature. In effect the lecturer's classroom role is largely that of a mediator and process consultant (Morrison and Johnston, 2003).

The UNED course is not designed to teach economy or business management. That is why after two weeks of lecture about the business plan and some economic and management concepts, the student must start developing his or her business plan. Preparing a business plan draws on a wide range of knowledge from many different business disciplines: finance, human resource management, intellectual property management, supply chain management, operations management, and among others marketing. You may expect the student to become an expert in a wide range of subjects. This is another reason as to why the role of teachers and professors is to act as consultants for the student. Such approach to learning will help to keep a reality-based focus and entrepreneurial climate, because the student has to discuss the different parts of the plan with teachers that have academic and business experience. The students have to discuss different parts of their business plan with experts in the matter, just like entrepreneurs do in real life.

Entrepreneurship professors met the same difficulties to teach that the professor of traditional business education found when they realized that there were no textbooks suitable to a graduate programme in business. The Business Plan is the method that has helped entrepreneurship education to face this problem, but it has a weakness which is that the teacher has to evaluate a business plan without knowing with certainty its future performance in the real world. Unlike other subjects or matters, where exists a body of accepted knowledge which the teacher can use as a set of guiding principles for his role of evaluator, entrepreneurship courses in business creation has not and has adopted the method used by science to produce new knowledge applying it to developed the hypothesis of the new firm. Science relies heavily on experimentation, business creation courses must rely on simulation (phase III) and this is the very weakness of the process because simulation in social sciences is not as reliable as experimentation in science. There are critical factors (Hindle, 2002) for successful use of simulation games in teaching entrepreneurship but in the case of virtual courses the software must in addition permit the student to work alone. The best option to run business games in distance education is the original Web Based Model (Bernard, 2006).

The combination of the three most common methods of teaching is the distinctive feature of UNED's course, which could be complemented by other methods.

2.3 Case Study and Entrepreneurship

Traditional business education centres teach the use of case studies. Case study methodology started when Harvard Business School was founded. The faculty quickly realized that there were no textbooks suitable to a graduate programme in business. Their first solution to this problem was to interview leading practitioners of business and to write detailed accounts of what these managers were doing. Of course, the professors could not present these cases as practices to be emulated because there were no criteria available for determining what would succeed and what would not succeed. So the professors instructed their students to read the cases and to come to class prepared to discuss the cases and to offer recommendations for appropriate courses of action. Basically that is the model still being used.

Case method teaching as developed by the Harvard Business School is centered on the performance of the professor. Students prepare for class by reading a case study written by experienced case writers, select a strategy and prepare to defend it. If time permits, they discuss their work with a few classmates before coming to class. The real action is in the classroom. The professor, who is a skilled discussion leader, asks provocative questions, pits one student against another, compares alternative solutions and goads the class into reaching significant conclusions (Bonoma, 1989). Case study teaching patterned on the Harvard Business School model deprives students of an authentic learning experience. The teacher is too much of a star and the students are too passive. As a result, the students fail to develop important skills that they need for success in their business careers.

The case methodology is not suitable for entrepreneurship education even if entrepreneurship professors could develop specific case study for entrepreneurs. Entrepreneurship education must use a methodology that can meet the needs of today's changing business environment, stress the cross-functional complexity of business problems, which permits individual thinking and creativity and that, will allow the student to pose novel solutions to new problems.

3. EVALUATION

Another objective of this paper is to deliver an evaluation report on the final results of the pilot-run virtual business planning and of the most suitable evaluation method for this kind of courses. According to our point of view, to evaluate training courses is to relate the programme outcomes directly to the objectives of the course. But before doing it, we should have a look at the methodological issues surrounding the evaluation of business courses.

3.1 Case Study and Entrepreneurship

Curran and Stanworth (1989), Gibb (1987), Block and Stumpf (1992) and Young (1997) have identified the need to evaluate education and training for new business creation. McMullan et al. (2001) make the point that while designing a methodology to evaluate programmes and courses may be comparatively easy, it is difficult to ensure that the approach adopted is actually valid. In a similar vein, Westhead et al. (2001) caution that, 'precise and careful methodologies are required to evaluate training programmes'.

The OECD has highlighted the need to develop appropriate measurement and evaluation of the impact, not just outputs, of entrepreneurship programmes (OECD, 2008: Policy recommendations chapter 5). Currently there is little evaluation of entrepreneurship education programmes and almost no statistical evidence, outside of some output indicators that may or may not be the right measures. Without clear objectives and measurement, support for programmes may be difficult to sustain:

- As we have seen in the United States, entrepreneurship is a result of a long-developed cultural and education environment
- Europe has already had many "starts and stops", and needs to take a much more sustained and long-term approach

3.1.1 Purpose of the Evaluation

Stake (1980) suggested that the purpose of evaluation should be to produce information that can guide decisions about modifications to a certain programme. This is an insider perspective to evaluations. Hytti and Kuopusjärvi (2004) have also mentioned:

- Marketing and public promotions purposes. Some programme promoters consider evaluation to be a good way of proving the results and quality of the training to other stakeholders since scientific evaluation (especially if carried by an independent party) can be seen as being objective as opposed to 'biased' marketing efforts.
- To report the activities taken.
- To measure the impact of programmes. Impact analysis to provide information of the impacts of an individual programme and/or institutional framework within a region/country for promoting entrepreneurship (for the policymakers). In this case the evaluator has adopted an outsider perspective to the evaluations.
- Financial reasons.

3.1.2 How to Evaluate

The following methodological literature about evaluation approaches can be summarized:

- Storey (2000) and McMullan et al. (2001) suggest that the best means by which to evaluate training courses is to relate programme outcomes directly to objectives.
- Positive position. Wyckham (1989) notes that no universally accepted criterion, which can be used to evaluate the effectiveness of such programmes, has yet been identified. Wyckham has argued that such programmes are measured in three ways. First, the knowledge and skills of students are assessed through examination. Second, courses and teachers are evaluated through student evaluation surveys. Third, after the course has been completed, data on the employment and income status of the graduate participants can be obtained and evaluated.
- Subjective or questionnaire approach. Westhead et al. (2001) and McMullan et al. (2001) observed that initially researchers attempting to assess the outcomes of training programmes asked participants for their views.
- Longitudinal Study. One means of measuring the behavior of participants following completion of a training course is to employ a model such as that advanced by Jack and Anderson (2001). This is a five-step framework for assessing the effectiveness of entrepreneurship education and training programmes based on an earlier version developed by Block and Stumpf (1992). The model is comprehensive and emphasizes the measurement and impact of different elements of training courses over time, from the outset of a programme to beyond its completion. A number of authors have noted the lack of longitudinal studies conducted within the area of education and training for new business creation and a clear need to evaluate such programmes over time has been identified (Clark, Davies and Harnish (1984); Fleming (1996); Westhead and Storey (1996); Wyckham (1989)).
- Evaluation must be adapted to the objectives and entrepreneurial competencies to be developed (European Commission, 2008).
- Causality approach. Assessment of the relation between cause (Venetoklis, 2002) and effect (Hytti and Kuopusjärvi, 2004).

3.1.3 Questions for Evaluations

The following indicators regarding questionnaires can be summarized from literature:

- An evaluation can be aimed at various points in the process: targets, performance, results or effectiveness of the programme (Laukkanen, 1996).
- Diamond and Spence (1983) acknowledge four basic types of questions for evaluation research: First, programme planning questions; second, programme monitoring

- questions; third, impact assessment questions; fourth, economic efficiency questions. The evaluation focus can be on individual entrepreneurship courses and programmes (quality and effectiveness) but also more broadly on the business link activities of universities and impact on society and economy (Volkman 2009).
- Evaluating quality, effectiveness and impact (Com, 2008; page 53).
 - Increase in knowledge and development of skills (Hytti and Kuopusjärvi, 2004).
 - Economic efficiency. Diamond and Spencer (1986).
 - The performance of university-business links or technology transfers (Nelson, Byers 2005; Wu, 2007).

3.1.4 Measures for the Evaluation Studies

For the programme planning purposes, it is quite customary that the participants (students, teachers, stakeholders) are directly asked questions about the programme. These questions typically centre on the different elements of a programme: contents (knowledge and skills the programme aims at providing), methods and materials (the way the knowledge and skills are learned/taught), teachers and tutors (those responsible for teaching/facilitating learning and their relationship with the students) and organization of the programme (the process, timing, rooms and facilities) (Hytti and Kuopusjärvi, 2004).

Monitoring evaluation provides a systematic assessment of whether or not a programme is operating in conformity with its design and whether or not it is reaching the target group. Based on the literature review, the monitoring studies frequently aimed at measuring and reporting the following: number of participants, recognition of participants (who they are), numbers of those returning to further training ('satisfied customer'), costs/participants (linked to economic efficiency), numbers of failed students, strengths and weaknesses of the programme.

Impact evaluation gauges the extent to which a programme instigates change towards the desired direction. This implies that we are not only interested in the effects, but also on their direction (Diamond - Spence, 1983). There are four ways of measuring impact:

- Several authors suggest measuring start-ups, new ventures, entrepreneurs and jobs (Com 2008). The start-up measure is suggested because it is concrete and relatively easy to measure.
- The measurement of attitudes, perceptions and intentions is frequently applied in programmes where the time lag is important in making it difficult to observe or to account for start-ups (Volkman, 2009; Hytti et al., 2004). Hytti et al. have interpreted that the underlying idea with measuring attitudes, beliefs and intentions is derived from the theory of planned behavior (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). The expert group has proposed the following indicators to assess the progress in entrepreneurial attitudes, perceptions and intentions: number of students taking entrepreneurship modules (before and after the programme, and compared to other target groups of students); the general population of higher education students (Com, 2008; page 56).
- Analysis of the causes for impacts. There is a need to assess the Causality relationship between the effect - in example, the emergence of start-ups - and the cause, an intervention aiming at increasing the number of start-ups, or if the companies would have been established irrespective of the intervention. The success rate of the programme will be better when the participants selected possess the necessary basic skills or motivation levels (Greimel, 1998).
- The quality of the start-ups and new workplaces (Volkman, 2009). Increase in knowledge and development of skills is measured assessing if the participants have learned to generate good business ideas and write successful business plans.

McMullan et al. (2001) advance the view that the objectives of courses for new business creation should be 'primarily economic' and, as such, 'appropriate measures could include businesses started or saved, revenue generation and growth, job creation and retention, financing obtained

and profitability'. Diamond and Spencer (1986) divide economic efficiency studies into two different approaches: cost-benefit analysis, measurement of costs against the monetary value of the benefits and; cost-effectiveness: measurement of costs against the qualitative achievements understood as the progress towards goal achievement.

Indicators for measuring the performance of university-business links include commercialized inventions, the number of new patents or licenses, revenues and the number of workplaces created by the new start-ups (Volkmann, 2009).

The evaluation of quality and effectiveness according to the point of view of the experts, must be adapted to the objective and to the entrepreneurial competencies to be developed. If the objective is to develop the entrepreneurial intention, the programme quality can be assessed through a questionnaire assigned to students to understand their perceptions of entrepreneurship, their self confidence to engage in an entrepreneurial activity and their perceptions of their capacity to detect opportunities and to exploit them.

If the objective is to learn how to engage in start-up activities, the evaluation can be based on student's performance in developing and presenting a business plan and their capacity to sell their project. However if the objective is to develop soft entrepreneurial skills, it will be more difficult to assess the quality of the programme, as little is known about the required entrepreneurial competencies and how to measure them. In this case, the assessment of the programme quality should be related to the pedagogies and the methods used.

3.1.5 Reviews to Evaluation Methods

Gibb (1997) doubts whether a definitive answer can ever be found to the question of effectiveness in terms of payback (cost-benefit analysis), moreover, Wyckham (1989) has noted that there has been difficulty in identifying appropriate output measures of such programmes as well as in determining causality.

The limitations of adopting a purely subjective approach to evaluation are highlighted as follows by Westhead et al. (2001). First, there is the issue of whether the participants on a particular course are representative of the target population as a whole. Second, respondents to a survey can be tempted to give answers that they feel the evaluator wants, instead of an honest response. Third, the impact of a programme can only be judged by comparing it with what would have happened had the respondent not participated in the course. Fourth, failure to take into account the personal characteristics of individuals might lead to an exaggeration of the effectiveness of a programme. Fifth, researchers should appreciate that participants self-select participation in programmes, which can lead to inaccurate assessments being produced in the evaluation of courses. Sixth, the subsequent behavior of respondents is actually more informative than the reporting of their opinions. McMullan et al. (2001) indicate that it is likely that most evaluations will continue to employ this approach. However, they do advise that this type of subjective judgment should be confined to determining the satisfaction of participants, and should not be used as a proxy for measuring the performance outcomes of a programme.

There are possible sources of bias of the Longitudinal Study. Garavan and O Cinneide (1994) argue: 'longitudinal research designs, using control groups to compare participants with individuals who did not have entrepreneurial educational experience, are needed to examine the lasting effects of entrepreneurship education and training interventions'. Storey (2000) also advocates such an approach, but suggests that the most appropriate way to assess the effectiveness of support programmes is to include a control sample of matched firms that are identical on the basis of age, sector, ownership and geography. Ideally such matching should take place before a programme commences so that the two groups can be monitored over time. In practice however, such conditions may be difficult to satisfy. Even if such a methodological approach is adopted, researchers need to be aware of inferential problems, so despite the fact that the matching characteristics of the two groups are kept constant, there may be other ways in which they differ. With specific reference to participation in courses and programmes, Storey

(2000) suggests that motivation and selection might be differentiating factors. For example, those firms or individuals seeking assistance or attending courses might be more dynamic and growth-oriented and therefore more open to new ideas.

Another source of bias can occur when participants are selected onto a scheme. In a competitive situation selectors will have to choose between various applicants and will select those who appear the 'best'. Potentially this could have implications when comparing against a control group, for as Storey (2000) notes, the performance of the selected group is likely to be superior to that of the matched group since better (the) candidates have been chosen. A related problem concerns exits during the course of a programme, which may introduce another source of bias. In addition, with particular regard to longitudinal studies, there is the problem of the 'mortality' of those being studied over time.

The start-up measure alone is considered to be too limited. It is necessary to take into account causality. To produce a large number of start-ups, is not enough. It was suggested that measures should be put in place to assess the quality of the companies e.g., by measuring the number of sustainable start-ups (companies that are on the market 3-5 years after the start-up), or by measuring if these start-ups are entering prospering or dead-end markets e.g., if university graduates are starting businesses mainly in the traditional service sector or in the high-tech sector (Rosa 2003). Furthermore, the number of jobs created (and the quality of these jobs) was also suggested as a measure reflecting also the question of 'quality' of these companies (Volkman, 2009). A processual approach is suggested to measure the different steps in the process starting from changes in skills, motivation and intentions (Hytti, 2004).

3.2 UNED Evaluation Method

Evaluation should assess the overall initiative of entrepreneurship education. Entrepreneurial Education should be evaluated assessing the organization that promotes the entrepreneurial initiative, the resources, the quality, effectiveness and impact of the programme, the methodology of the course and the services offered to the student.

3.2.1 Indicators of the Organization in which the Programme is embedded

UNED offer is limited to a program of technology based companies within the institutional framework of OTRI (UNED) and to the offer of an elective course in business creation that will allow the student to obtain academic credits. UNED is also involved in the project Cross Border Virtual Entrepreneurship (CBVE).

Number of entrepreneurship programs in which the organization is involved.	3
Annual budget of the organization.	201,665,000.00€
Part of the budget dedicated to entrepreneurial programs.	<0.05%
Number of teachers dedicated to entrepreneurship.	4
Number of researches in entrepreneurship.	3
Number of persons that offer administrative support for entrepreneurship courses.	3
Number of students	179,385

FIGURE 6: Key Indicators UNED

Items	Indicator
1) Resources	Human and material resources
2) Quality and effectiveness	Methodology Services Students results
3) Degree of Satisfaction of students	Questionnaires
4) Impact	Economic Social

FIGURE 7: Programme Indicators

Resources	
Total Budget.	59,836€
Budget for Start-ups	-
Number of teachers	2
Number of researches.	2
Administrative support	1
Number of students.	14
Entrepreneurial and business experience of the teachers.	Medium
Experience of teachers in entrepreneurship education.	Medium
Facilities.	Enough
Online materials and Virtual platform	Yes
Network with business and administration.	Strong possibilities due to the links of the University

FIGURE 8: Resources

Quality and effectiveness

UNED methodology has been described in section 2 and includes a combination of three of the most common methodologies that are being used in the most important geographical areas. According to the Final Report of the Expert Group (2008) evaluation of quality and effectiveness must therefore be adapted to the objective and to the entrepreneurial competencies to be developed. If the objective is to learn how to engage in start-up activities, the evaluation can be based on students' performance in developing and presenting a business plan and their capacity to sell their project.

Objectives	Method	Outcomes
Compulsory		
Assess their entrepreneurial competencies	Results of examination	57.14%
Screen business ideas and select the most potentially viable business project	Results of examination	57.14%
To be able to develop a Business Plan	Results of examination	50.00%
Entrepreneurial Skills	Results of examination and the kind of methodology (Business Plan)	50.00%
Additional¹		
Proposals presented to funding institutions	Number of students that have presented a proposal to a funding institution	0.00%-28.57%
Business Creation	Number of students that have started a business	0.00%-28.57%
Entrepreneurial Competences	Number of students that have had an accepted proposal from a funding institution	0.00%-28,57%

FIGURE 9: Programme Indicators

We, the authors of this article, have included only information about the services regarding the different entrepreneurship courses, from Spain. Only Spain is included, as the immediate environment and the competitors of this entrepreneurship course, are situated here (Figure 10). However, we do acknowledge that the phases of the course coincide with the phases of any standard course in Business Creation in the USA.

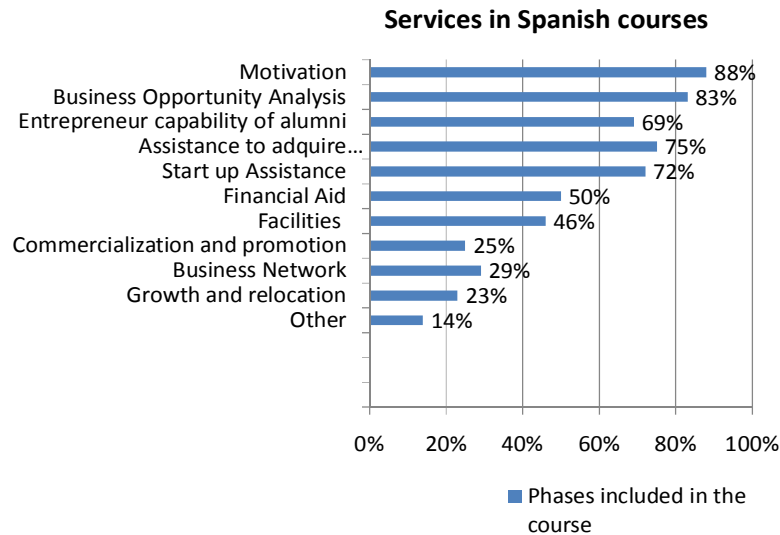


FIGURE 10: Services

The UNED course covers: motivation, Business Opportunity Analysis, Entrepreneurship capability of alumni and assessment of entrepreneurial competencies, and start-up assistance.

Start-up assistance could be considered included only if we consider the help that the teachers could give to the student that has joined an Administration Programme for New Entrepreneurs asking for funding for the new venture. The ideal way to implement our course is to make it coincide with any Administration Programme that could provide the necessary funding for the new entrepreneur. Most of the problems that the student will face alone in other circumstances could be solved with the help of the teachers of the course.

The impact of the UNED course:

Economic impact (Figure 11)

Concept	Number	% of students
Number of start-ups	4	0.00%-28.57%
Number of jobs created	?	?
Total revenue of the Start-ups created	?	?

FIGURE 11: Economic Impact

Economic quality indicators (Figure 12)

Concept	Number	% of students
Survival rate of the Start-ups.	?	?
Wage or income of the new entrepreneur after five years	?	?
Results in I+D	-	-
Results in commercial development	-	-
Number of patents	-	-
Number of innovations	-	-
Number of firms in traditional sectors	0-4	0.00%-28.57%

FIGURE 12: Economic quality indicators

Social impact of entrepreneurship indicators (Figure 13)

Concept	Number
Number of universities or organizations that imitate the program or course	-
Economic impact of the program reflected in the media and through other channels	-
New funds received from organizations (Administration, companies, ..)	-
Number of articles in JCR or other journals	-
Number of minutes, pages, and times about the program or course in the media.	24h
Number of conferences and seminars in which the program or course has been presented.	3
Number of students with curriculum in entrepreneurship	10
Number of students with entrepreneurship skills	10
Number of students with entrepreneurship competence.	4

FIGURE 13: Social impact of entrepreneurship indicators

The course and its methodology have been analyzed in different conferences and seminars (Leuven 2009, Maastricht 2009 and Villach 2009) for external appraisal and the outcomes of

training has been asking the participants for their views. The Video Lessons of the course have been internationally transmitted through RAINETTUNO.

4. CONCLUDING REMARKS

We have used the UNED course as an example to present our point of view of the ideal methodology and evaluation method that should be used in business creation courses and also as a proof that it could be put into practice with the normal resources available at university.

Creation of Business Plans is the most popular type of teaching method in entrepreneurship courses/curriculum offered by two- and four-year colleges and universities in the United States.

According to the survey requested by the European Commission, lecturing is the most common teaching method in entrepreneurship in Europe, followed by the use of case study. The teaching methods that are being used in Europe, based in the information provided by the survey requested by the Commission, coincide partially with the methodology that is being used by the traditional business education programmes and universities.

Creation of Business Plans methodology does not assure by itself the active-applied and active-experimentation learning style required by the entrepreneurial education. The approach of the course to the business plan is the key to the achievement of this goal.

In the case of a business creation course the course should lead to the creation of new companies. This objective has been fulfilled in some cases, with backing of financial institutions within the institutional framework of foundations or universities. In absence of this support, the teachers should help the students to use the different programmes for start-ups offered by the public administrations.

The course methodology proved very valuable: not only because is the combination of the three most common teaching methods but also because the course is organized to experience entrepreneurship rather than simply teaching economic knowledge. The weakness one may observe in the methodological scheme, is in the simulation phase because of the difficulty to find adequate software, and because sometimes it is very general while other software is too specific to meet the students' needs. This problem is not just a problem of computer science. Economy as a science must improve the methods supported by software. It is our believe that the simulation phase should provide details about the new firm's viability and not just train the student or give him or her more knowledge about the project.

The business idea should be studied more carefully. Although case study is not the right methodology for the overall course in this phase, it could be used to help the students learn more things about their business idea through the experiences of other people.

The selection of students could improve the number of start-ups because the teachers of the course could elect the students interested in starting a business and not just those interested in following another subject to increase their curriculum. In connection with this last idea we think that if entrepreneurial studies are to become a professional career for students, like the studies that are followed in a business schools, there is need for financial aid otherwise this kind of courses will be demanded but not by the best students.

Finance is as important as the business idea or methodology. However, finance is not going to present itself. The course should include a fourth phase dedicated to advice the students how to get the financial resources for their project or help them to do it. Another way to solve this problem is that the university could provide the students with a business incubator once they have finished the course. In any case the creation of entrepreneurial schools within universities is fundamental to act as the link between firms and students. It is very important to disseminate entrepreneurial activity in other kind of studies that do not have relation with economics and the

inclusion of business creation courses in their curricula is interesting from the point of view of social impact, but cannot substitute the creation of entrepreneurial schools.

For many of the studies, the evaluation has only lasted the length of the initiative, thus providing a one-off snapshot, carried out immediately after programme completion, rather than any attempt to track subjects over successive years. This is a failure of our course that should be corrected keeping in contact with the new entrepreneurs. It is true that the most common focus of evaluations is on the rate of business start-up as an impact measure. This is not the only factor, and in our study we have mentioned many others, but from the economic and political point of view is the most interesting one.

Online distance education courses in business creation and entrepreneurship education are possible and successful (Hanke, 2005). Furthermore to experiences of some distance education universities, some literature review of distant learning and course performance acts also a guarantor for the feasibility of this kind of studies. Kotey (2006), Sooner (1999), Gubernick and Ebeling (1997) found that distance-learning students out-perform internal students, Pool (1996) studied the relation between course performance and distance learning. Didia and Hasnat (1998) found a positive association between age and student performance and argued that maturity is beneficial to the learning process. Adams and Hancock (2000) established that the amount of work experience was a better predictor of successful performance in an MBA programme than GMAT score or undergraduate grade point average. Of course, within the literature there are evidences of the contrary. Given these conflicting results, the only thing that we can say is that there is no conclusive evidence that distance education approach to entrepreneurial education is wrong or unfeasible.

The growth in popularity of distance learning courses is indisputable (Cheung and Kan, 2002). Why should it not be possible to teach entrepreneurship in a distance learning environment, when virtual practices in firms are a reality?

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The Effect of Perceived Organizational Support and Safety Climate on Voluntary Turnover in the Transportation Industry

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Abstract

A model investigating the relationship between safety climate, perceived organizational support, and voluntary turnover is developed and tested with data collected from the trucking industry. Perceived organizational support is shown to mediate the relationship between safety climate and voluntary turnover, but this effect occurs only with tenured employees who are not at the beginning or end of their careers. This implicates a curvilinear relationship of the variables and offers statistical support for a temporal nature of perceived organizational support which has not been found in previous studies.

Keywords: Perceived Organizational Support, Turnover, Safety Climate, Empirical

1. INTRODUCTION

From its inception, perceived organizational support has received justified attention and continues to be a promising theoretical contribution to issues of social exchange. By looking at the pieces of this powerful theory, the current study attempts to build upon its depth by including yet another variable to the growing list of variables used to assess how individuals perceive support from their organizations. Interestingly, perceived organizational support literature has yet to include variables pertaining to safety and risk in the work environment. The only study to date that included a factor of work environment used the term job conditions which was considered to be an assessment of whether or not employees enjoyed their daily job activities and whether or not they had control over these tasks [15].

Organizations face substantial costs when accidents and injuries occur in the workplace. Among a multitude of others, these costs may include monetary awards granted for worker compensation, insurance and medical costs, and a loss of human capital. According to the National Safety Council's Injury Facts [1] report, the workplace accidents of 2003 in the United States alone attributed to 3,400,000 disabling injuries and 4,500 deaths which led to a staggering total cost of \$156 billion, the majority of which was due to lost wages and productivity. These enormous expenses have catapulted the control of safety issues to the forefront of many organizations' objectives.

Organizations with long track records for keeping employees safe and for promoting safe actions through communication, training, and incentive programs build a good reputation [5] and organizational safety climate which may lead to a reduction accidents, claims filed, and as shown later in this article, voluntary turnover. Organizations and researchers alike understand turnover negatively affects organizational performance [17], [27], [28] due to the costs associated with searching, hiring, and training new employees, and the decreased efficiency related to new employee inexperience. Perceived organizational support has also been considered as an important factor when investigating the causes of turnover [3], [19], [29]. When considering turnover, perceived organizational support has shown that the reciprocal actions taken by

individuals toward the organization generate organizational commitment and a reduction in voluntary turnover.

The similarities of safety climate and perceived organizational support and their effects on individuals within the organization need further investigation. Therefore, the purpose of this manuscript is to present arguments, supported by empirical research, to further explain the relationship between safety climate, perceived organizational support, and voluntary turnover. The manuscript differentiates between voluntary and involuntary turnover because this offers a more complete description of how organizations can proactively reduce the amount of turnover present [17], [27], [28].

The paper is organized as follows. Relevant literature regarding perceived organizational support, followed by safety issues and safety climate, is discussed. Next, a brief review of the types, causes, and effects of turnover in an organization is presented. These analyses set the stage for hypotheses brought forth to explain the relationships between perceived organizational support, safety climate, and voluntary turnover. Data was collected in the U.S. trucking industry to test these hypotheses. The trucking industry offered an environment that fosters a need for safety and thus was deemed appropriate for our study. Analysis of the data is presented after a brief introduction of the methods used for collection. The paper concludes with a discussion of the implications these theoretical arguments have on human resource management practices and issues for the direction of future research.

2. BACKGROUND AND THEORY

2.1 Perceived Organizational Support and Safety Climate

Perceived organizational support, developed by Eisenberger, Huntington, Hutchison, and Sowa [14], suggests that employees develop perceptions regarding the degree to which their organization values their contributions and the amount of concern exhibited towards their well-being. The underpinnings of perceived organizational support are derived from social exchange theory which was developed to explain interpersonal relationship maintenance in the context of the work environment. Once an individual has assessed the organizational support they receive, they act in accordance with a norm of reciprocity [18]. Thus, when individuals are dealt with in a fair and just way, they will be obligated to react in a positive manner toward those who initiate the treatment.

When an individual perceives the organization to be supporting them by valuing their contribution to the organization and by indicating concern for their well-being, the individual will then feel obligated to be committed to the organization and will show this commitment through increased work efforts [13], [14], reduced absenteeism [13], [14], and reduced turnover intention [19]. Also, several studies have indicated specific job conditions that contribute to perceived organizational support. For example, Wayne et al. [29] found that promotions and adequate training were positively related to perceived organizational support. Alternatively, when the organization repeatedly indicates that the contribution and well being of individuals is not highly valued, then employees will lose their commitment to the organization and will in turn decrease their performance on the job [12]. According to Eisenberger et al. [12], the decreased commitment and performance of employees leads to an increased level of intention to quit the organization.

An important distinction of social exchange theorists comes from discretionary versus mandatory actions taken by the organization. Voluntary aid given by the organization leads employee to believe they are genuinely respected and valued in the organization, while mandatory or required actions do not have any affect on their beliefs of the organization [10], [12], [18]. The ability of the organization to exert discretionary actions will vary across the organization, as will the perceptions employees have concerning these actions. The organization will be constrained by a variety of factors throughout its divisions and therefore freedom to act in a discretionary manner will be limited [12].

Safety climate has been defined as “the manifestation of the underlying safety culture in safety-related behaviors of employees and in employees’ expressed attitudes” [24]. In other words, safety climate represents the attitudes of the employees toward safety which can affect the actual safety level that the organization reaches. Safety climate has been operationalized through the distribution of survey questionnaires to employees and these studies, similar to perceived organizational support, have persistently shown management commitment and employee training as contributing factors [16]. Safety preparation or training is an important factor of a safety climate [20]. Job training programs reveal the intentions and commitment of the organization by showing employees that they are valued [31]. The actions taken by the organization to keep employees safe will lead to positive employee attitudes toward safety and will have significant effect on the safety climate. It is important to indicate that employees must feel that this is a genuine interest in their welfare [5].

Barling and Hutchinson [5] commented that scholars have dealt with the issues of safety through two different approaches: control-based orientation or commitment-based orientation. The control-based orientation creates a managerial method that stresses rule enforcement, develops occupational goals, and creates reward and punishment structures. This orientation fits well with other control-based initiatives outlined by human resource managers in an attempt to reduce costs and realize enhanced efficiency [4]. The commitment-based orientation crafts a managerial method which infuses trust and organizational commitment by allowing employees to participate in the decision processes, offering better training, and paying higher wages. The main idea behind commitment-based orientation is that it will facilitate a more effective way to prolong an organization’s competitive advantage.

The commitment-based approach is more effective in sustaining a competitive advantage than the control-based approach because trust in management and organizational commitment are positively related [23]. Barling and Hutchinson [5] believe that the managerial staff’s exhibition of legitimate interest in the welfare of employees infuses commitment to the organization better than simply acting in accordance with administrative and government safety regulations. Employees create their assessment of the safety climate by observing the actions, actual or spoken, of management and then deciding if management is truly committed to their safety. This portrayed legitimate interest then alters the safety climate of the organization.

As in perceived organizational support literature, the management of a firm must use discretionary or voluntary actions above and beyond that which is required to elicit commitment from its employees. Individuals who think the organization enacts safety measures to comply with regulatory agencies will likely not exhibit reciprocal behaviors and will not feel positive effects towards the safety climate. Also similar to perceived organizational support, safety climate will take on a favorable or unfavorable nature based on the perceptions of management’s actions and indication of employee value.

Recent research of safety has detailed the different roles organizational support plays in worker safety behaviors [9], the development of favorable safety climates [24], safety climate moderation of the relationship between leader-member exchange and content specific citizenship [21], and safety related behavior when related to social exchange [20]. Thus, similar to perceived organizational support, the literature regarding safety climate has begun to acknowledge a relationship with social exchange. Another important study described the relationship between safety communication and that of perceived organizational support [20]. It demonstrated that perceived organizational support was positively related to safety communication. This stems from the idea that employees are more willing to make suggestions with the intent of helping the organization when they perceive the organization to support them. This offers another example of the similarity of safety climate and perceived organizational support because safety communication is one of the major factors in creating a favorable safety climate [20]. As can be seen above, safety climate and perceived organizational support both rely on discretionary management actions, adequate training of employees, and legitimate concern for the value and

well-being of employees. Also, each has been shown to lead to reciprocal behaviors such as organizational commitment and more effective work habits. Thus,

Hypothesis 1: Perceived organizational support is positively related to favorable safety climates.

2.2 Turnover

Knowing turnover's effects is important for organizations, but first it is important to adequately understand the processes of turnover by demarcating it into two distinct groups: voluntary and involuntary turnover. Voluntary turnover occurs when an individual purposefully decides to leave a job for reasons other than retirement or similar life circumstances. Voluntary turnover generally occurs when an individual foresees comparable work alternatives available or when the current job is no longer attractive [22]. Involuntary turnover occurs when organizational actions are taken to relieve an individual from their position. The importance of this distinction comes from the fundamental differences regarding reasons why the two types occur [27]. Individuals who leave a job may be unsatisfied with the organization or may have better prospects elsewhere while involuntary turnover could stem from market forces or from bad hiring procedures at the human resources level. Combining the two types of turnover leads to incorrect descriptions of what may actually be occurring within an organization.

The turnover literature developed over the last three decades has focused primarily on turnover determinants and has used turnover, or the intent to quit, as the dependent variable in empirical studies [17]. The basic premise that scholars have taken while conducting their research has been that increased amounts of voluntary or involuntary turnover will have ill effects on the performance of the organization [25], [28]. In a recent study, Shaw et al. [28] countered this belief by showing that the relationship may more complex than a standard linear model. They posit that the relationship takes a curvilinear shape due to the fact that as turnover increases organizational performance decreases only to a particular level and then begins to level out. The diminishing effect of turnover established in their study has implications for Abelson and Baysinger's [2] optimal turnover model.

Abelson and Baysinger [2] previously created a similar figure in their study to that of Shaw et al. [28] by looking at the degree of performance and turnover through a relational diagram. Both studies clearly show that an optimal turnover rate can be reached and that this rate is "the rate that minimizes the sum of the costs of turnover plus the costs associated with reducing it" [2]. Organizations should not consider this optimal rate to be the same for all because differing environments will dictate various rates for each company [7]. Turnover research has been conducted predominantly from the individual level but some studies have also dealt with turnover from the organizational and industry levels [27]. According to Shaw et al. [27], the organizational level aspect of turnover research has been neglected but does offer considerable insight as to how the two types of turnover transpire. Arthur [4] chose human resource activities to operationalize the organizational level aspect of turnover and found that turnover and performance relationships are dependent on these activities of the organization.

Arthur's [4] findings have particular implications for the current study. Specifically, the actions of human resources, which are basically a portion of the actions of management, can be seen throughout the variables that describe perceived organizational support and safety climates. For example, both have shown adequate training will lead to favorable perceptions from employees. Also, both theories claim that the perception of management's commitment to employees is important for positive development and that management's commitment is indicated through its actions. Thus, due to the similar affects on perceived organizational support and safety climate from managerial actions and the multiple studies showing a negative relationship between perceived organizational support and voluntary turnover, favorable safety climate may also have a negative relationship with voluntary turnover. Thus:

Hypothesis 2: Perceived organizational support is negatively related to voluntary turnover.

Hypothesis 3: Favorable safety climates are negatively related to voluntary turnover.

Mediation of the relationship between safety climate and voluntary turnover may exist. Several perceived organizational support studies included job conditions as antecedents of perceived organizational support [3], [11], [26], [29]. Since the safety climate is contingent on several factors that may be seen as job conditions, it too may be mediated by perceived organizational support. The nature of the mediation is contingent upon the results of the three previous hypotheses. Thus,

Hypothesis 4: The negative relationship between safety climate and voluntary turnover is mediated by perceived organizational support.

3. METHODS

3.1 Sample

The data for this study were obtained from a trucking company in the United States that is composed of team, single, and local drivers. Surveys were distributed throughout the drivers and all replies were kept confidential. Data were sought regarding intent to quit, safety procedures, safety perceptions, and support from management and its policies. Though not used for this specific research project, questions regarding dispatch, pay satisfaction and accuracy, and load levels were also acquired. To ensure that no other relationships affected the dependent variable, these items were used within a subsequent regression analysis and provided no significant relationship with any of the variables. Responses were received from 113 company drivers. After reviewing the data and ridding it of non-responses, 103 usable responses remained.

Measures

3.2 Exploratory Factor Analysis

To assess the extent to which the scales created held together, an exploratory factor analysis was conducted. This analysis included the items for perceived organizational support, safety climate and voluntary turnover. The turnover items were excluded from this analysis since they pertained to factual information that was not predicted to be internally consistent. The results of the principle components analysis with varimax rotation are shown in Table 1.

3.3 Independent Variables

Perceived organizational support was calculated by creating a 5-item scale similar to the Eisenberger et al. [12] perceived organizational support scale. This scale assesses the degree to which an individual perceives their organization values their contributions and the amount of concern exhibited towards their well-being. It was created for this specific study and used five-point Likert-type scales for responses that ranged from "Strongly Disagree" to "Strongly Agree." An example item is, "Top management realizes how important company drivers are to success." Confirmatory factor analysis was used and showed that all items loaded onto one factor. The alpha coefficient for this scale was .86.

Safety Climate was calculated by creating a 3-item scale for this specific study. This scale also used five-point Likert-type scales for responses that ranged from "Strongly Disagree" to "Strongly Agree." The safety climate scale represents the attitudes of the employees toward safety which are derived from the actions of management. An example item is, "We hear more about the need to increase productivity than about the need to be safe," (reverse coded). Confirmatory factor analysis was used and showed that all items loaded onto one factor. The alpha coefficient for this scale was .68.

3.4. Dependent Variable.

Intent to quit was used as the dependent variable in this study. As stated previously, this follows

Scale and Item	Factor Loadings ^a		
	1	2	3
POS			
Top management realizes how important company drivers are to Miller's success	0.71	0.28	0.33
Miller makes sure new drivers understand exactly what the job is like	0.44	0.27	0.33
I left orientation feeling that this company really cares about us	0.61	0.16	0.25
Top management will act on the results of this survey	0.60	0.15	0.31
Company drivers are often treated like second-class citizens at Miller	0.62	0.19	0.39
Intent to Quit			
I see myself working at miller for a long time ^b	-0.13	-0.91	-0.25
I don't plan to drive for Miller much longer	-0.27	-0.55	-0.09
I've found a home at Miller	-0.30	-0.80	-0.16
Safety			
Miller emphasizes safety	0.16	0.26	0.61
Management is always talking about how important safety is	0.30	0.08	0.57
We hear more about the need to increase productivity than about the need to be ^b safe	0.27	0.06	0.73
Eigenvalue ^c	3.77	2.77	2.74
Percentage of variance explained	23.59	17.32	17.15
Alpha	0.83	0.83	0.68

^aFactor Loadings for the correct scale are shown in italics type.

^b Indicates items reverse coded.

^cDerived from rotation sum of squared loadings

TABLE 1: Factor Analysis Results for Multi-Item Subjective Scales

many authors' operationalizations of voluntary turnover. A three-item scale was specifically created for this study but resembles the Michigan Organizational Assessment Questionnaire's items. This scale also used five-point Likert-type scales for responses that ranged from "Strongly Disagree" to "Strongly Agree." An example item is, "I see myself working at the company for a long time." Confirmatory factor analysis was used and showed that all items loaded onto one factor. The alpha coefficient for this scale was .83.

3.5. Control Variables

Rhoades and Eisenberger [26] noted that the demographic variable of tenure, along with several others, had not "eliminated bivariate relationships involving POS" but they did choose to include it to "decide the extent of [its] relationship with POS." Therefore, following Rhoades and Eisenberger, tenure was controlled for in this study. Tenure was calculated by asking the following question: "How long have you driven for Miller?" The responses were given in months.

Analyses

Following the guidelines set forth by Baron and Kenny [6], linear regression analysis was used to test Hypotheses 1-4. Regression equations were computed in Hypothesis 1 by entering Intent to Quit as the dependent variable and Safety Climate as the independent variable. Next, Perceived Organizational Support was entered as the dependent variable with Safety Climate again as the independent variable. Then, Intent to Quit was entered as the dependent variable while Safety Climate and Perceived Organizational Support were both entered as independent variables. In the first analysis, tenure was not controlled. Then tenure was separated into two groups, those above the mean and those below the mean. Last, tenure was separated into three groups: lower quartile (25% of data set), interquartile range (50% of data set), and upper quartile (25% of data set). The steps provided by Baron and Kenny (1986) were taken again with each tenure group.

Results

Table 2 presents the means, standard deviations, and intercorrelations of the study variables. Although not hypothesized, there was a significant, negative relationship between perceived organizational support and tenure ($r = -.28$). When looking at this relationship, it must be noted that the standard deviation in tenure was extremely high which may indicate distinct groups amongst the individuals surveyed. Table 2 shows initial support for Hypotheses 1-3. There was significant correlations between perceived organizational support and safety climate ($r = .58$; Hypothesis 1), perceived organizational support and intent to turnover ($r = -.51$; Hypothesis 2), and safety climate and intent to turnover ($r = -.33$; Hypothesis 3).

Variable	Likert Scale	Mean	s.d.	1	2	3	4
1. Safety	1-5	3.83	0.74	<i>0.68</i>			
2. POS	1-5	2.90	0.94	0.58**	<i>0.82</i>		
3. Intent to Quit	1-5	2.40	0.94	-0.33**	-0.51**	<i>0.83</i>	
4. Tenure	mo.	131.79	96.15	-.11	-.28**	0.04	<i>0.04</i>

** $p < .01$

Coefficient Alpha for scales found on diagonal in italics

TABLE 2: Correlations and Descriptive Statistics for All Variables

To further test these results and to adequately test the proposed mediation effect in Hypothesis 4, regression analyses were conducted in the manner set forth by Baron and Kenny [6]. Table 3 provides a summary of the models and results used to test Hypothesis 1-4.

Hypothesis 1 predicted that perceived organizational support would be positively related to safety climate. The regression analysis revealed that perceived organizational support was significantly related to safety climate ($b = .619$; $\text{sig.} = .000$), thus supporting Hypothesis 1. Hypothesis 2 predicted that perceived organizational support would be negatively related to intent to turnover ($b = -.525$; $\text{sig.} = .000$), thus supporting Hypothesis 2. Hypothesis 3 predicted that safety climate would be negatively related to intent to turnover. Once again, the results showed support for Hypothesis 3 ($b = -.450$; $\text{sig.} = .000$).

Hypothesis 4 predicted that perceived organizational support would mediate the relationship between safety climate and intent to turnover. Given the results of Hypotheses 1-3, the preconditions for mediation were supported [3]. The final step for the mediation showed that, when regressed onto intent to turnover, perceived organizational support continued to be significant ($b = -.381$; $\text{sig.} = .000$) while safety climate was no longer significant ($b = -.212$; $\text{sig.} = .058$). This indicates that there was adequate mediation by perceived organizational support, thus supporting Hypothesis 4.

		df	b	s.e.	t	sig.
1	<i>All tenure included</i>	103				
	Safety Climate		-0.212	0.110	-1.918	0.058
	POS		-0.381	0.111	-3.429	0.001
2	<i>Tenure < 131</i>	59				
	Safety Climate		-0.386	0.143	-2.704	0.009
	POS		-0.247	0.136	-1.822	0.074
3	<i>Tenure >= 131</i>	44				
	Safety Climate		-0.120	0.165	-0.729	0.470
	POS		-0.453	0.187	-2.420	0.021
4	<i>Tenure < 50</i>	23				
	Safety Climate		-0.519	0.240	-2.165	0.043
	POS		-0.087	0.209	-0.417	0.681
5	<i>Tenure > 50 and < 190</i>	55				
	Safety Climate		-0.055	0.148	-0.368	0.715
	POS		-0.343	0.159	-2.162	0.036
6	<i>Tenure > 190</i>	25				
	Safety Climate		-0.646	0.206	-3.140	0.005
	POS		-0.212	0.232	-0.911	0.373

TABLE 3: Regression Analyses and Mediation Results

Though the preceding results seem compelling and do support the hypotheses developed, the significant relationship between perceived organizational support and tenure must be further investigated. Therefore, tenure was separated in two ways to test its influence on the relationships represented by the data. First, tenure was separated by simply creating two groups that were composed of those individuals with months of tenure above the mean tenure amount ($m = 131$) and those with tenure below the mean tenure amount. All of the steps provided by Baron and Kenny [3] were rerun for each group. This same procedure was conducted in the second separation procedure. In the second procedure, tenure was delineated between the lower quartile, the interquartile range, and the upper quartile of the data set. Results for these analyses may also be seen in Table 3.

Baron and Kenny's [3] preconditions were met with each of the five analyses. When looking at the group of individuals with tenure below the mean tenure amount, the mediation effect of perceived organizational support does not occur because safety climate does not become nonsignificant ($b = -.386$; $\text{sig.} = .009$) while perceived organizational support becomes nonsignificant ($b = -.247$; $\text{sig.} = .074$). In the second analysis, using those with tenure above the mean tenure amount, perceived organizational support continues to be significant ($b = -.453$; $\text{sig.} = .021$) while safety climate becomes nonsignificant ($b = -.120$; $\text{sig.} = .470$), thus supporting mediation. The lower quartile was then created, which included those individuals who had been with the company for less than 50 months. This analysis showed that perceived organizational support was nonsignificant ($b = -.087$; $\text{sig.} = .681$) and safety climate was significant ($b = -.519$; $\text{sig.} = .043$), thus not supporting mediation. The interquartile range consisted of those individuals with tenure between 50 and 190 months. This analysis showed that perceived organizational support was significant ($b = -.343$; $\text{sig.} = .036$) and that safety climate was nonsignificant ($b = -.055$; $\text{sig.} = .715$), thus supporting mediation. Last, the upper quartile was calculated and consisted of those individuals with tenure above 190 months. This analysis showed that perceived organizational support was nonsignificant ($b = -.212$; $\text{sig.} = .373$) while safety climate was significant ($b = -.646$; $\text{sig.} = .005$), thus not supporting mediation.

4. DISCUSSION

To summarize the results, it was found that (a) perceived organizational support was significantly and positively related to safety climate, (b) perceived organizational support was significantly and negatively related intent to turnover, (c) safety climate was significantly and negatively related intent to turnover, and (d) perceived organizational support mediated the relationship between safety climate and intent to turnover. Due to the great variability in the tenure of the drivers in this company and due to tenure's high correlation with perceived organizational support, further analysis was conducted that separated tenured individuals into groups. Perhaps the most notable finding from these results was that as tenure varied across the groups, so did the mediation effect of perceived organizational support.

The first supplementary analysis, which separated tenure above and below the median tenure amount, showed that those individuals with low tenure would likely quit due to issues regarding safety and that perceived organizational support was not of importance. The exact opposite was found by those individuals who have high tenure. A possible explanation for this relationship could be that when employees are hired for jobs that include issues of safety and hazard, they may find safety to be the most important factor indicating whether or not the company has legitimate concern for their value and well-being. Thus, the safety training and communication from the very start of dangerous jobs may help to reduce the amount of voluntary turnover within a company. As time goes on, safety climate's indication of concern for employee well-being may be met and then issues regarding perceived organizational support may become more salient. This would explain the mediation effect found when individuals in the organization have relatively high tenure.

Upon further analysis, a curvilinear effect was shown to exist in the data set. Individuals early in their career found safety to be highly important. Individuals with middle range tenure (interquartile range) found that perceived organizational support was more important. Last, individuals late in their career, once again, found safety to be highly important. These interesting results could lead to a number of interpretations. For example, as stated in the previous grouping, the lower tenured employees would likely be highly interested in their safety when starting a new job of a hazardous or dangerous nature. As time goes on and they become comfortable with the way the organization handles safety issues, they become more inclined to find factors of perceived organizational support to be more important when considering quitting the organization. Finally, as they enter the final years of their employment prior to retirement, they once again start to find safety to be an important factor in their intention to quit. This may mean that as individuals near the end of their careers in industries with dangerous work requirements, they will not find factors of perceived organizational support as important as in prior years. For example, a driver with the organization studied here, may begin to disregard whether or not his supervisor values him and his work efforts when he enters the final stages of his career with the company. He may be "counting the days" until retirement. Also, he may have reached a plateau in the organization's hierarchy and pay structure. Thus, at this time in his life, making it through the final years on the job would be more important than some of the factors involved with perceived organizational support.

From the results shown here, it could be argued that offering high levels of safety training at the beginning of an employee's career and offering more safety, or less dangerous work, to those who have been on the job for many years, would reduce their intention to quit the organization. In the current analysis, individuals who are in the upper quartile based on tenure would not be required to haul highly hazardous materials; they would be more involved in safety meetings; and they would be asked to help in the training of less tenured employees regarding safety procedures and concerns. In this case, employees in the lower quartile would receive adequate training and communication of the safety climate within the organization, and the upper quartile employees would take active participation in this activity while reducing their hazardous job requirements. This interpretation also supports the fact that safety climate may not be stable across time periods [24].

Although this study has interesting findings, it has several limitations that need to be addressed in future research. First, the cross-sectional design of the current study does not allow for causality to be inferred from the results. As noted by Wright, Gardner, Moynihan, and Allen [30], human resource practices have not been studied through predictive designs very often and this creates results that lack causal inference. It is not possible to infer whether or not reduced safety requirements for those with longer tenure would reduce the intent to quit the organization, and thus our results should be interpreted with caution. A way to combat this issue would be to use longitudinal designs when conducting research of this nature. A second limitation of this study is common method variance possibly created by using the same procedure from a single source to obtain the responses from drivers. An interesting addition to this research would have been to inquire on the opinion of the supervisors for the employees concerning safety climate and perceived organizational support. This data could then be compared with that of the employees for a better understanding. Another possibility would have been to use a mixed methods approach and include qualitative data with the results of the study. Personal interviews that contain open-ended questions would suffice in this endeavor. A final limitation to the study is its generalizability to other organizations. By using a company from an industry that has obvious safety issues, we have limited our generalizations to other companies found in similar industries. This may seem to be a grievous error but in actuality it fits well with our presentation of the theoretical foundations of the construct safety climate. Safety climate will be more salient to individuals who find themselves employed in industries that require high levels of safety regulation and training. Employment that requires high levels of safety can be found throughout many industries. In particular, transportation, manufacturing, and construction firms should find the results of this study to be valuable.

Future research should take into consideration the limitations of this study but the implications of these results should be furthered by scholars in a number of ways. First, perceived organizational support has been shown by Rhoades and Eisenberger [26] to have no temporal nature. The current study offers different results. By showing the issues of safety climate as more important to new employees and long-tenured employees than perceived organizational support, this study may be the first indication that perceived organizational support not only occurs after adequate time in the organization, but also may decline after many years of employment. Perceived organizational support continued to have a positive relationship with employees throughout all tenure groups. It was not until the mediation effect was analyzed that the implication of perceived organizational support fluctuating appeared. Scholars should investigate this further by looking at the mediating effects of other variables with perceived organizational support and their relationships with tenure. Also, research regarding the issues of safety climate needs further investigation in light of the analysis. Safety climate reacted in a similar manner to perceived organizational support when limited to tenure groups. Therefore, research previously conducted concerning the development of favorable safety climates [24] and safety climate's moderation of the relationship between leader-member exchange and content specific citizenship [21] need to be reassessed with tenure as a control variable. Last, from a practitioner's standpoint, the implications of this study may help alleviate the pressures felt from the enormous costs associated with safety, injuries, and turnover. Finding new ways to create a positive safety climate will likely be the contributions of later work. This paper's intent was to give a full description of the safety climate and perceived organizational support and to call attention to its significance. Hopefully, further research will be able to operationalize these ideas to help human resource managers meet their organizational objectives.

5. CONCLUSION

As shown through this analysis, safety climate and perceived organizational support both rely on discretionary management actions, adequate training of employees, legitimate concern for the value and well-being of employees, and each lead to reciprocal behaviors such as organizational commitment and more effective work habits. The empirical results of this study have added yet another similarity between these constructs. Intention to quit the organization was highly related to both safety climate and perceived organizational support, but there were mixed results when varying the tenure of the employees in the study. Different tenure levels may cause the saliency

of the constructs to change. Specifically, a curvilinear relationship was recognized, with those employees who had either relatively low or relatively high tenure finding safety climate to be more important in relation to their intentions to quit the organization. Despite several limitations in this study, scholars should be able to utilize these findings to create novel studies to further investigate these relationships.

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Utilizing the BSC and EFQM as a Combination Framework; Scrutinizing the Possibility by TOPSIS Method

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Abstract

Increasing the competition between organizations in the field of productions and services leads them to use the samples and patterns to assess their activities and performance. Appearing this kind of needs and inefficiency of measuring systems with traditional activities assessment causes to create new models of activities assessment in organizations. These models could be divided in two groups. The first group is based on self assessment and the second group is based on measurement and improvement of business trade process. Among mentioned models, Balanced score Card (BSC) and European Foundation for Quality Management (EFQM) have had more chance to be used by many companies. Regarding the high acceptance of these two models in the world and existence many similarities between them; this study is going to present exact glance of these two models and present a comparison between them. Moreover, after recognizing the weaknesses and powers of them, the possibility of using them at the same time will be evaluated. In order to gain this goal, an automobile company's performance has been assessed based on BSC and EFQM and the results are analyzed with TOPSIS method.

Keywords: : Balanced score Card (BSC), Total Quality Management (TQM), European Foundation for Quality Management (EFQM), TOPSIS Method, Assessment, Performance

1. INTRODUCTION

In the past decades, fast provident of global completion which caused by technological change and increasing of products variation lead companies to find out importance of constant

improvement process to sustain their constant competition progress. At present organizations and enterprises search many ways and opportunities to improve, maximize strong and to minimize weak sides of their activity. As the practice shows, the managers seek the tools to strategic management basing on well-known principles of the PDCA Circle - Plan, Do, Check and Act [16].

Performance measurement systems dominated by financial measures have often been criticized [4]. Researches show that the traditional system of activity measurement which was based on financial management is not suitable. Financial measures have been characterized as backward-looking, historical, aggregate, and too focused on short-term results. Non-financial measures are believed to be more predictive of future performance and more useful in "driving" performance. Increased competitive pressures, implementation of other programs like Total Quality Management (TQM), and the perceived limitations of traditional financial measures have led to increased usage of non-financial measures [2][4]. There are eight limitations of traditional performance assessment as below:

- ✓ Basis on traditional cost management
- ✓ Using slow and retarded standards
- ✓ Lack of strategic links
- ✓ Complexity of implementation and performance
- ✓ Inflexibility
- ✓ Contradiction in accepting constant improvement
- ✓ Neglecting customer needs and expectation
- ✓ Over concern traction on increasing profit and decreasing costs

At the result of these limits, new measurement system appeared on discourses. The major parts of discussion in new discourse were base on new organization strategies and nonfinancial symbols. New action measurement systems could be divided into two groups:

- ✓ First group emphasizes self assessment like Deming Prize [27], Malcolm Baldrige Award [18] and European Foundation for Quality Management (EFQM) [7].
- ✓ Second group are systems which are helping managers for assessment and improvement of trade and business like Balanced Score Card (BSC) [20].

The common basis of mentioned models is a straggle to like plane of activities with further landscape of an organization. Meanwhile, Balanced Score Card and European Foundation for Quality Management have been more acceptable for organizations.

This study is begun with an overview of the BSC and EFQM including an outline of the foundation vision and mission statements, which are at the core of their development process. Following this, a brief comparison between them is presented. Finally, as the main subject of this study, it is discovered that whether performing two models of EFQM and BSC are more influence together or alone. In this regard, a performance assessment has been conducted in Sepehr Karamadan Company (SK Company) with implementing BSC and EFQM and then the results has been analyzed using TOPSIS method. The reasons for choosing BSC and EFQM are because both models are accepted and recognized as implementation tools in many countries including in the American, European and Asian countries. Hence using these tools in this research guaranteed the reliability of study.

2. METHODOLOGY

This stage is to design the research methodology to achieve the research questions. The first step of constructing an instrument of performance assessment is literature review. The paper begins with a discussion to explain what the BSC and EFQM are and what are their similarities and differences. The primary methodology is case study. Research was conducted through personal interviews with executives and managers at SK Company which is an automobile properties supplier manufacturer in Iran with 400 employees that has been established in 1979 in Iran. Then the TOPSIS method was used to analyze the results of the performance assessment. It should be noted that this results were gained by implementation of BSC and EFQM at SK Company.

3. THEORETICAL BACKGROUND

3.1. Balanced Score Card (BSC)

The balanced scorecard (BSC) is one of the most highly touted management tools today [19][25][3][21]. The Balanced Scorecard Approach has been developed at the Harvard Business School by Kaplan and Norton [27] since the early 1990s. It is an essentially multi-dimensional approach to performance measurement and management that is linked specifically to organizational strategy [6] and fortune 500 companies are increasingly using it. A survey found that approximately 50 percent of Fortune 1000 companies in North America and 40 percent in Europe use a version of the BSC [26].

It suggests that as well as financial measures of performance, attention should be paid to the requirements of customers, business processes and longer-term sustainability. Thus four areas of performance are defined (Now labelled as financial, customer, internal business and innovation and learning), and it is suggested that up to four measures of performance should be developed in each area (Figure 1 shows the BSC framework) [6]. The BSC is now being listed as a value methodology along with cost-benefit analysis and return on investment [24]; it is being used to help change organizational culture [1]; and several companies have reported improved operational efficiency and profitability as a result of using the BSC [13][3][14].

A major strength of the balanced scorecard approach is the emphasis it places on linking performance measures with business unit strategy. This appears to be a very weak area in many organizations and the technique provides a practical approach to addressing this issue [6]. The framework of the four perspectives of the BSC helps to translate strategy into objectives and measures. The four perspectives are financial, customer, internal process, and learning and growth [22]. The critical success factors created in each of the four perspectives are balanced between long term and short term, as well as internal and external factors that contribute to the business strategy [6].

The Balanced Scorecard is thus a potentially powerful tool by which senior managers can be encouraged to address the fundamental issue of effectively deploying an organization's strategic intent. It focuses on establishing links between strategic objectives and performance measures; it also pays some attention to measuring the achievement of the components of the strategic plan the organization has espoused.

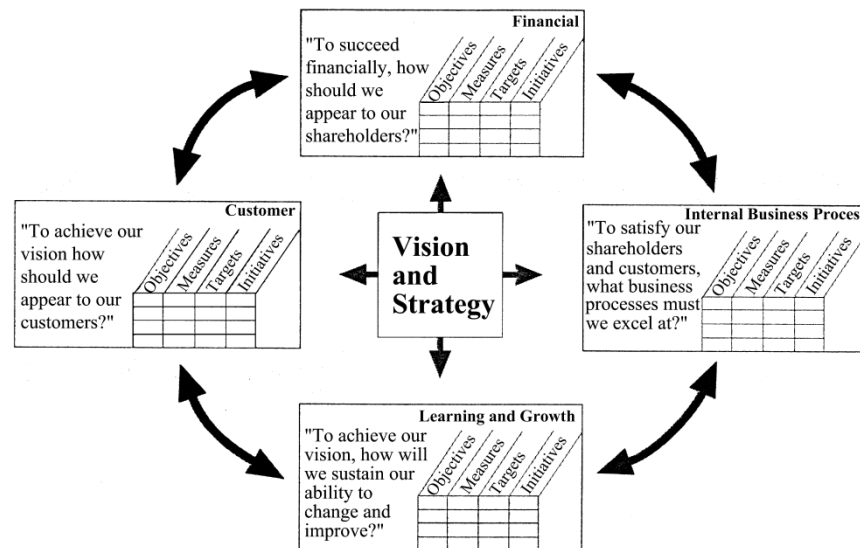


FIGURE 1: The BSC: a framework to translate a strategy into operational terms [27].

In summary, the BSC helps an organization in the following six ways [6]:

1. Promotes growth; due to focus on long-term strategic outcomes, not just short-term operational results.
2. Tracks performance; individual and collective results can be tracked against targets in order to correct and improve.
3. Provides focus; when measures are aligned to a few critical strategies, the BSC provides focus on what is important to the company.
4. Alignment to goals; when you measure what is truly important to success; the measures become linked and support each other. Alignment occurs across the organization.
5. Goal clarity; the BSC helps respond to the question, "How does what I do daily contribute to the goals of the enterprise?"
6. Accountability; individuals are assigned as owners of metrics in order to provide clear accountability for results.

3.2. European Foundation for Quality Management (EFQM)

The EFQM Excellence Model was introduced at the beginning of 1992 as the framework for assessing organizations for the European Quality Award [15]. The EFQM Excellence Model is based on the accepting and consistent realizing in everyday practice "Eight Basic Rules of Excellence" that is adapted to the European conditions, the principles of the Total Quality Management (TQM), which implemented in the strategic management process guarantee the success of the enterprise, its development and strengthening of the market position (See Figure 2) [10][12].

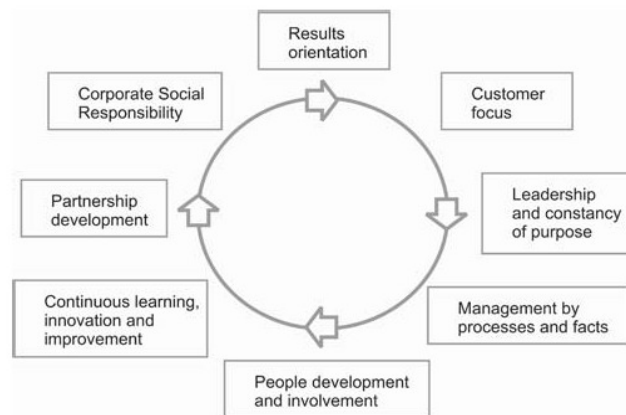


FIGURE 2: Eight Basic Rules of Excellence [12]

The EFQM Excellence Model, a non-prescriptive framework based on nine criteria as shown in Figure 3. Five of these are 'Enablers' (leadership, people, policy strategy, partnership and resources, and processes) and four are 'Results' (people results, customer results, impact on society results and business results) [15]. Organizations can use the model and the process of self-assessment to improve performance. It is flexible and can be applied to organizations of any size, in the public and private sectors. It is now the most widely used organizational framework in Europe [11] and has become the basis for the majority of national and regional Quality Awards.

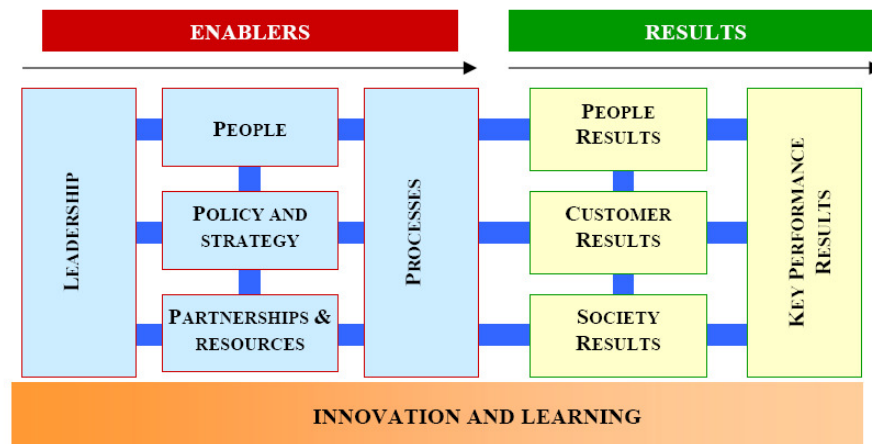


Figure 3: EFQM Excellence Model [18]

The EFQM Excellence Model is a practical tool that offers several advantages from the empirical research perspective, as do other Quality Awards [15]:

1. The model is regularly revised and updated, incorporating the contributions of EFQM consultants.
2. It provides an extensive set of sub-criteria to detail the exact meaning of each criterion.
3. EFQM is intended to be instruments for comparing an organization with its competitors in order to achieve and/or maintain competitive advantage.

3.3. Comparison of BSC and EFQM

The Balanced Scorecard and the European Foundation for Quality Management (EFQM) Business Excellence Model are tools that use measures of an organization's performance to drive organizational improvement, generally by highlighting current shortfalls in performance, in areas of particular concern or interest to management teams [17]. In the first glance these two models are very similar to each other. Similarities like common goal, common ideas, both of them are behaviour assessment models and are trying to improve behaviours and are base on cause and effect but in spite of this similarities, it is essential to know that the two approaches come from very different backgrounds and are designed and used using different processes, further, their essence and history are different and each of them provides different profits. This part is going to compare these two models. Otley [6] has written a research paper entitle " Performance management: a framework for management control systems research " which has asked five questions about organizational performance frameworks as below:

1. What are the key objectives that are central to the organization's overall future success, and how does it go about evaluating its achievement for each of these objectives?
2. What strategies and plans has the organization adopted and what are the processes and activities that it has decided will be required for it to successfully implement these? How does it assess and measure the performance of these activities?
3. What level of performance does the organization need to achieve in each of the areas defined in the above two questions, and how does it go about setting appropriate performance targets for them?
4. What rewards will managers (and other employees) gain by achieving these performance targets (or, conversely, what penalties will they suffer by failing to achieve them)?
5. What are the information flows (feedback and feed-forward loops) that are necessary to enable the organization to learn from its experience, and to adapt its current behavior in the light of that experience?

These questions relate very closely to some of the central issues of modern management and management accounting practice. Table 1 shows the analysis of BSC and EFQM based on these five questions.

TABLE 1: BSC and EFQM Comparison

EFQM	BSC	
Helping manager to establish changes by the TQM principles – increasing efficiency in decision making and leader capabilities assessment of organization situation by 9 values.	Key aim of justified behavior with the strategy of organization.	Objectives
No direct suggestion for selecting strategy and plan is given to organization. Just help organization to recognize the field for analyzing EFQM.	Using strategic plan to explain organization strategies in 4 aspect of BSC.	Plans and Strategies
Aiming is not stirringly mentioned and the man offers aim base on the situation.	Aiming is not considered but the cause and effect is the strategic way for this purpose.	Targets
In 1999 version reward was paid attention as a part of assessment.	Rewards and the exams should be adapted with each other.	Reward
It is the major part of this model. Results of four aspects can be considered as information feedback.	Obvious need to the process of learning.	Feedback

Regarding Table 1 it could be said that no one of these models is answering those 5 questions, this does not mean that these two models are unsuitable or unable to employ the organization mentioning this that both of these models are unprescribed which means that a manager can use these models regarding different circumstances. EFQM is a framework designed to assist organizations achieve business excellence through continuous improvement in the management and deployment of processes to engender wider use of best practice activities. It enables the calculation of scores against a number of criteria that can be used for either internal or external “benchmark” comparisons. It is hoped that the results of these relative comparisons will lead to increased focus on improving key process performance, and so generate “business excellence” [17][23], while BSC is a framework that expresses an organization’s strategy as a set of measurable goals from the perspectives of owners/investors, other external stakeholders, and the organization itself. If these goals and associated measures, and targets are well chosen, the Balanced Scorecard will help managers focus on the actions required to achieve them, so helping the organization achieve its overall strategic goals and realize its strategic visions [22][23].

Moreover, BSC drives continuous improvements in processes within an organization versus EFQM that focuses management agenda on achieving strategic goals and supports two way communications of strategic priorities and organizational performance [17]. Both of them are flexible and should be used within the strategy, culture and aims of the organization. Important goals of both are in special areas. BSC is concentrated on four aspects and EFQM is concentrated on nine aspects. EFQM is not mentioning special programs and strategies while BSC helps the managers by means of strategy plan. None of these models is helping managers for aiming. Furthermore, both of them, little has been mentioned about reward while in previous version of EFQM in 1999, it was not mentioned anything about it. The importance of information feedback has been indicated in both models. Table 2 shows the differences and similarities of BSC and EFQM.

TABLE 2: Differences and Similarities of BSC and EFQM

Similarities	Differences
Both of them have unimpeachable structure. There is not obvious way for successful performance. There is relation between reward and encouragement systems. Both of them concentrate to the customers’ profit. Both of them are sponsored and committed with an entire management team.	EFQM is based on total quality management (TQM) principles while BSC model is based on organization expected strategy. Information feedback is different in these two models. BSC is more flexible than EFQM.

4. POSSIBILITY OF USING EFQM AND BSC AS A COMBINATION FRAMEWORK

Regarding the similarities and differences of these two models which explained above, this question arose that “which one is better, using BSC and EFQM together as a combination model or use each of them individually”. Because of the fundamental differences that stated in Figure 4, it is better to employ both of these models together then superior results will be gotten. At continue, it is described that how BSC could be used to concentrate and indicate EFQM and also by using the EFQM how can strengthen the influence of BSC.

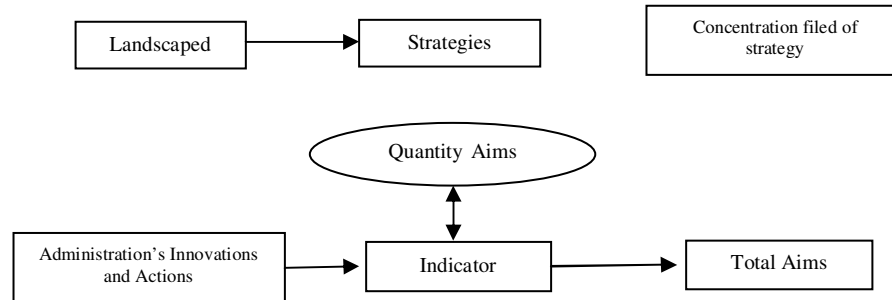


FIGURE 4: Schematic view of BSC

4.1. Movement From BSC Toward Superiority

After recognition the strategic behaviour of organization, its aims, indicators and the manner of performance by means of BSC, it is valuable to improve the quality level of processes which supports the aims and indicators to achieve strategic goals that are necessary. By using the self assessment information, organization can have a greater recognition for achieving its strategic goals (Figure 5).

BSC	Strategy	Improving Superiority Level	Maintaining High Level Quality	Competition Value
	Nonstrategic	Improvement Until the Level of Quality Acceptability	Eliminating Extra Investment	Organization's Efficiency Sign
		Weak Points	Strength Points	

FIGURE 5: Supplementary of Superiority Model.

Using the model of superiority can fill the gap of acting between what the organization is and what will be at 2 or 5 years. These tools can be used as an indicator of time and assets which are needed for the process to determine the aims by BSC.

4.2. Movement from Superiority Toward BSC

As Table 1 is shown, using the EFQM provide a well understanding of the processes' strengths and weaknesses which have been obtained. Although as a result of activity evaluation, it can be realized what processes need to be improved, which processes are suitable, or in comparison with other organizations in what areas are noble but, it is not understood which areas are priority strategic or what kind of actions will result in even more valuable for improving the organization's activities. Then, in order to priority setting and resource allocation measures to strategic focus areas, BSC can be used as a tool.

Spend time and money to improve weak areas in the self-assessment process had been diagnosed, but do not have strategic importance, is not necessary. Of course in these areas least acceptability should be covered. Moreover, with conducting the evaluation, the noble points of organization are identified which may not be strategic, subsequently, additional investment and investiture should be avoided in these areas and organization's resources should be guided in the direction of the weak processes with the strategic priority (Figure 6).

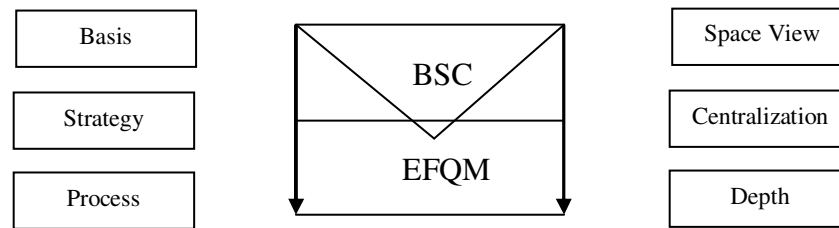


FIGURE 6: EFQM Model that makes BSC Model Exhaustive.

Thus, BSC is employed as a supplemental self-assessment tool for strategic priority setting. Therefore, resources are assigned to the important strategic areas that need improvement, not only in areas where businesses have contained low self-assessment score. Combined use of BSC and EFQM, and combined them together will ensure that organization will do appropriate actions with the knowledge that they will improve organization's performance.

According to the above, it can be concluded that each of the BSC and EFQM, in the range of pre-eminent business organization, have a special place and they can be used together to cover the weaknesses of each other. In fact, intelligent application of these two models, processes and management will be strengthened. Some organizations have tried the merger of these two models to develop a new model. Such actions cause complexity, not fully understanding and coverage of the models and finally using them inappropriately. While both models with the full understanding and considerate their strengths and weaknesses, they can be used together effectively.

Most of the managers, with regard to the amount of resources spent and the high volume measures of self-evaluation process are worried. To these group managers, EFQM is very time consuming and complex model. Furthermore, lack of communication between strategic management and quality improvement activities will cause that managers face to a large number of improvement projects with no priorities. Although some managers believed that the use of the EFQM model improves the master communication, planning and participation by employees, but evidence indicates that overall business is not improved. Thus the Balanced Score Card model was introduced to cover two weaknesses of EFQM model which are as follows:

- I. Lack of strategic orientation
- II. Need to focus on improvement activities

5. RESULTS ANALYSIS USING TOPSIS METHOD

According to the discussion above, it is understood that using BSC and EFQM jointly enable organization to impart their advantages together. Furthermore, after identifying the BSC and EFQM's differences and similarities and their strengths and weaknesses, it is recognized that each of them can cover another weaknesses, therefore, an interview was conducted with SK Company's managers and experts and fifteen indicators were chosen among BSC's indicators which had more priority in comparison with other indicators against EFQM's nine criteria. Then, BSC and EFQM were implemented in SK Company. It should be noted that each organization has its own and unique BSC's indicators. After that, with using the TOPSIS method the effect rate of EFQM's criteria in comparison with BSC's indicators were evaluated quantitatively in a 9*4

matrix to determine the most important EFQM's criteria in the most significant BSC's indicators as shown in Table 3.

TABLE 3: The priorities of EFQM's criteria in comparison with BSC's indicators.

		BSC's Aspects	BSC's Selected Indicators	EFQM's Criteria									Total
				Leadership	Strategy	People	Partnerships and Resources	Process	People Results	Customer Results	Society Results	Key Performance Results	
BSC's Selected Indicators	1	Financial	Increase Profits	4	3	2	8	4		4		8	33
	2		Become a Cost Leader	2	2	1	8	4		3		8	28
	3		Reduce Production Costs	2	2	3	1	9				8	25
	4		Income from New Clients	8	4	1	2	4	1	9	2	3	34
	Total			16	11	7	19	21	1	16	2	27	120
	5	Customer	On time Delivery of Product to Customer	2	2	1	3	9		8	2	2	29
	6		Increasing Brand's Vision	2	9	2	1	1	2	8	5	2	32
	7		After Sale Services	2	3	1	2	1		9	2	2	22
	8		Focus on Customers	9	2	2	1	2	2	7	2	2	29
	Total			19	16	6	7	13	4	32	11	8	112
	9	Learning and Development	Staff Satisfaction	9	2	6	1	1	5	2	1	2	29
	10		Training	3	2	9	2	4	8	2	2	2	34
	11		Developing Teamwork	7	6	9	2	2	4	1	2	7	40
	12		Relationship between Payments and Qualifications	2	8	9	2	2	7	1	2	4	37
	Total			21	18	33	7	9	20	6	7	15	140
	13	Internal Processes	Communication with Suppliers	4	2	2	9	1		1	2	4	25
	14		Coordination between Internal Parts	4	5	2	2	2	2	1		8	26
	15		Improve Production Processes	2	2	4	3	3	4	6	3	2	29
	16		Number of stock-outs	4	3	1		2	7	1	4	3	25
	Total			14	12	9	14	8	13	9	9	17	105

5.1. TOPSIS Method

TOPSIS (technique for order preference by similarity to an ideal solution) method is presented in Chen and Hwang [5]. TOPSIS is a multiple criteria method to identify solutions from a finite set of alternatives. The basic principle is that the chosen alternative should have the shortest distance from the positive ideal solution and the farthest distance from the negative ideal solution [8]. The procedure of TOPSIS can be expressed in a series of steps:

- i. Transform decision matrix into the dimensionless matrix with using of relation:

$$n_{ij} = x_{ij} / \sqrt{\sum_{i=1}^m x_{ij}^2}, \quad i = 1, \dots, m, \quad j = 1, \dots, n.$$

- ii. Construct the Weighted Normalized Decision Matrix:

$$V = N_D \cdot W_{n \times n} = \begin{bmatrix} V_{11}, \dots & V_{1j}, \dots & V_{1n} \\ \vdots & \vdots & \vdots \\ V_{m1}, \dots & V_{mj}, \dots & V_{mn} \end{bmatrix}$$

- iii. Determine the Ideal and Negative-Ideal solutions:

$$A^+ = \{v_1^+, \dots, v_n^+\} = \{(\max_j v_{ij} | i \in I), (\min_j v_{ij} | i \in J)\},$$

$$A^- = \{v_1^-, \dots, v_n^-\} = \{(\min_j v_{ij} | i \in I), (\max_j v_{ij} | i \in J)\},$$

- iv. Calculate the Separation Measure:

$$d_{i^+} = \left\{ \sum_{j=1}^n (v_{ij} - v_j^+)^2 \right\}^{1/2}, \quad i = 1, 2, \dots, m$$

$$d_{i^-} = \left\{ \sum_{j=1}^n (v_{ij} - v_j^-)^2 \right\}^{1/2}, \quad i = 1, 2, \dots, m$$

- v. Calculate the Relative Closeness for the Ideal Solution:

$$cl_{i^+} = \frac{d_{i^-}}{(d_{i^+} + d_{i^-})}, \quad 0 \leq cl_{i^+} \leq 1, \quad i = 1, 2, \dots, m$$

- vi. Rank the preference order. For ranking alternatives using this index, we can rank alternatives in decreasing order [9].

Calculated results are shown in Table 4. They demonstrate that A7 has the most priority versus A9 has the lowest ranking.

TABLE 4: TOPSIS Results

Criteria	di+	di-	Ci+
Leadership	0.04	0.038	0.487179
Strategy	0.036	0.034	0.485714
People	0.044	0.045	0.505618
Partnerships and Resources	0.06	0.0142	0.191375
Process	0.104	0.044	0.297297
People Results	0.052	0.043	0.452632
Customer Results	0.022	0.177	0.889447
Society Results	0.044	0.04	0.47619
Key Performance Results	0.054	0.01	0.15625

6. CONCLUSION

The choice of performance measures used in managing an organization is critical. Performance measures are an essential element in the evaluation of an organization's success, in achieving its strategic objectives, and in management compensation plans [2].

With growing the number of organizations which their types of activities require large amount of investments in financial and intellectual in the area of communication and information technology and modern services, and often they are incredibly concern about their investment return so the performance evaluation should be particularly important.

BSC as one of the latest innovation in management, is a multidimensional measurement system which provides a performance assessment framework with an integrated look at the business results, moreover, it includes quantitative criteria of short-term, result-oriented, and non-financial dimensions of quality, stimulating and long-term. The key features of BSC emphasizes on communication between company's strategy performance indicators [6] and by integration and providing a set of financial and non-financial indicators and link them to the organization's strategies and strengthen their connection oriented approach, it is expected that organization's problems would be reduced.

On the other hand, using the EFQM model can be filled the pre-eminent organization performance gap between what is today and what should be achieved in the future. EFQM is useful for comparative analysis of organization with other organizations and BSC will be valuable intended for transparency in the organization and implementation strategy.

As mentioned earlier, EFQM can help organizations to identify their strengths and weaknesses. With the activity evaluation can understand what processes need to be improved and which processes are suitable. However, it cannot be diagnosed the areas' priority and what kind of actions provide better results for improving the organization performance, BSC as a tool to prioritize actions and allocate resources to focus on strategic areas can be useful. All areas which are specified in self assessment that need improvement are not important and valuable for the organization so these kinds of investments may not be profitable. Concurrent use of two models together makes benefits for organization because ones' strengths will cover another's weaknesses. Additionally, as mentioned before, Balanced Score Card model and EFQM model despite some apparent similarities have some differences in the basic concept. Some important differences are:

- EFQM is independent from the environment but BSC is dependent.
- EFQM model is descriptive versus BSC is centralized.
- EFQM model is objective but BSC is a mental model.
- EFQM model shows the current status and BSC represent future status.

According to this study, in order to have a superior understanding of organization's process and its strategies, it is suggested to fully implement both of BSC and EFQM. Many organizations around the world which using these two models at the same time, have been able to have better results than when one of these two models had been used and the results gained from performance assessment using TOPSIS method in SK Company demonstrated it as well. Thus, it is recommended that organizations use these two models together as an integrated model.

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