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E-BUSINESS ENABLERS AND BARRIERS: EMPIRICAL STUDY OF SMES IN JORDANIAN COMMUNICATION SECTOR

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ABSTRACT

The current study aims at investigating the relationship between e-business growth and e-business enablers and barriers by SMEs in Jordanian communication sector. More specifically, the study attempts to identify factors associated with SMEs' adoption of e-business, including barriers and enablers impacting on this adoption. The quantitative approach is employed since it describes and measures the studied phenomenon. Questionnaire is sent to all companies in the sample that was obtained from Jordanian Ministry of Communication. 306 questionnaires were returned with response rate is 86 percent. Correlation analysis is used to identify the strength and direction of relationship between the stages of e-business growth and e-business enablers and barriers. The result reveals that there is a highly significant positive relationship between stages of e-business growth (email exchange, information exchange, and Web presence) and certain enablers and barriers; however our strength of association was highly to moderate.

JEL: L86, M15, M31.

KEYWORDS: SMEs, Electronic business, Growth stages, Communication sector, Jordan.

INTRODUCTION

A growing body of research seeks to examine the impact of e-business on organizations, especially SMEs. Dynamic and vibrant SMEs play a key role in successful national economic growth, irrespective of whether the country concerned is a developed or a developing one (Trumbach et al, 2006; Ramdani et al, 2009; Obafemi, 2009). Given their importance in any economy, it is no surprise that almost every country places special emphasize on supporting and strengthening its SMEs through a variety of institutions and programmes. The Internet and e-business are seen by governments around the world as a technology critical to supporting the development of this sector (Levy et al, 2005; Hourali et al, 2008).

Governments have instigated intervention projects and offered financial incentives to encourage SMEs to adopt the Internet and subsequently to develop e-business systems that will enable them to trade more effectively with business partners. Despite the attempts of government and various support programs, very few SMEs have reached the advantaged stages of e-commerce (Al-Qirim, 2007b; Scupola, 2009; Kapurubandara and Lawson, 2009; Mendo and Fitzgerald, 2009; MacGregar and Kartiwi, 2010). SMEs need this support to overcome the economic and competitive disadvantages that they face, especially when they adopt e-business. In the present study, SMEs are targeted for several reasons. Firstly, as has already been mentioned, they play a major role in the development of any economy, no more so than in Jordan. SMEs are viewed in Jordan as sources of flexibility and innovation and make a significant contribution to economic, both in terms of the number of SMEs and the proportion of the labour force employed by these organizations. For example, Nasco et al. (2008) and Obafemi et al, (2009) pointed out that SMEs make an extremely important contribution to an economy, especially to the rapid growth of developing countries. Secondly, previous studies on e-business have focused on large businesses. SMEs are ignored because, in many cases, it seems that they are perceived to be unsophisticated and therefore of

no interest to researchers investigating IT adoption and implementation (Poon and Swatman, 1998; Nasco, 2008). Thirdly, although studies have looked at e-business adoption by SMEs from various angles, the stages of growth of e-business and the factors involved as two of the main issues involved have remained curiously under researched. Finally, SMEs also have unique characteristics in such respects as size, age, turnover and top management structure (Rao et al., 2003; Bose and Sugumaran, 2009; MacGregor and Vrazalic, 2008; Obafemi et al, 2009; MacGregor and Kartiwi, 2010).

From the comprehensive review of the literature it is evident that there is a scarcity of empirical work attempting to determine those key enablers and barriers in the context of the Middle East. The adoption of e-business by SMEs generally and within Jordan in particular is still a relatively new phenomenon (Al Nsour, 2007; Titi, 2005). Implementation is still very much in its initial stages of growth (Lawson, 2003; Daniel, 2002). Certainly, no empirical work focuses on Jordan to evaluate the maturity of e-business growth. Therefore, it is very important to gain an in-depth understanding of the barriers and enablers regarding E-business adoption Jordan. The paper, first, presents a review of the literature pertaining to the concept of e-business in small businesses environment. More specifically, e-business enablers and barriers will be highlighted. In the light of the literature gap, the study aim and objectives will be defined. Thereafter, the methodology employed for this paper will be considered. The study results will be analysed and interpreted in the light of theoretical evidence reported in extant literature. Finally, a number of conclusions drawn from this investigation will be discussed, along with limitations of the study and avenues of future research.

LITERATURE REVIEW AND BACKGROUND

According to Arab Advisors Group (2009) survey on ICT usage in SMEs reveals that: Internet penetration in Jordan is 36% which is a high figure for the region. Internet usage more than doubled from 2007 to 2009 with the rapid growth expected to continue. Jordan has more internet start up companies than any other country in the Middle East. The Jordanian government has recently announced that the sales tax on computers and internet connection would be removed in order to further stimulate the ICT industry in Jordan. There by increasing the uptake from 22.3% of Jordanian SMEs who do not have (PCs). Of these companies that have PCs, over a half has a LAN set up in the office and more than two thirds of the companies use the Internet. 58.2% of the companies that use Internet started using it more than 3 years ago. 92% of companies in Amman use the Internet, which is far higher than other cities. More than 74.5% of the companies that use the Internet have Internet dialup accounts, with only 15.2% having Internet leased lines, and 15.2% having Internet ADSL.

A little more than a quarter of Jordanian SMEs have a web page. Start up Arabia report (2008) looked at ICT usage of individuals number of Internet Subscribers in Jordan will be around 50% internet penetration rate, with 35,000 employed in the ICT sector and over $3 billion revenues by 2011. While Asymmetric Digital Subscriber Line (ADSL) at the end of September 2008, there were over 29.000 ADSL subscribers in Jordan. Furthermore, that there are about 1.6 Internet users in the country in 2009, a penetration rate of 25.4 per cent (Internet world Status, 2009).The ICT infrastructure is rapidly expanding in Jordan, the number of landlines reached 629,000 at in 2007, an expansion rate of 11 percent, while the number of mobile phone subscribers reached 3.826 million at an expansion rate of 70 per cent. (UN report 2007). In more recent study conducted by Global Arab Network (2009) showed the ICT sector in Jordan represented 14.3% of GDP in 2008, making it one of the largest single contributors to the economy, with growth more than 80,000 new positions being created between 1999 and 2008. Of these, the report said, 16,650 were direct jobs within the industry, a further 49,852 were indirect jobs and the remaining 15,365 were listed as induced positions. According to Global Information Technology Report (2009) the ranked for Jordan were 44th out of 133 countries on its networked readiness index for ICT development. Also the report ranked Jordan's overall business readiness at 73rd, with staff training coming in at 67th and company spending on research and development at 108th.

Previous studies suggested that SMEs are in early stages of E-business adoption (Taylor et al, 2004; Mendo and Fitzgerald 2005; Pavic et al, 2007; Erikson et al, 2008; Eshun et al, 2009; Hunaiti et al, 2009; Al-Weshah et al. 2011). According to these commentators, in these early stages of implementation SMEs adopt e-commerce mainly for information and communication purposes. For example, Poon (2002) argues that SMEs' adoption of internet commerce is still slow, and that many SMEs are not realizing short-term benefits from this method of transaction. Surveys conducted in the UK and other parts of the world have indicated that e-business uptake among SMEs has been slow (Taylor et al, 2004). Al-Weshah et al. (2011) concluded that e-networks use in Jordanian businesses is still in embryonic stages. Mendo and Fitzgerald (2005) emphasized that the number of SMEs in the advanced stages of e-business is very low compared with larger companies. This finding has been supported by Pavic et al (2007), who found that the adoption of e-business in UK SMEs as the basis for business communication and transaction in SMEs is still sluggish. This slow rate has been attributed to the various barriers or impediments faced by these organizations, which in turn is mainly due to the low level of diffusion if information and communication technology, especially in a developing economy that limits the level of awareness of e-commerce (Molla and Licker., 2005).

Several studies have been carried out to examine the relationship between SMEs and e-commerce, and the opportunities created by the adoption of e-business by SMEs. SMEs have recognised the positive effect that the Internet and e-business can have on their operations, benefits that include business applications using computer terminals, email and the Internet (Hunaiti et al, 2009; Erikson et al, 2008). Porter (2001) demonstrated that SMEs have been known to adopt new technologies as soon as they are available.

Internet technologies help businesses establish distinctive strategic positions to a much greater extent than allowed by previous technologies. Drew (2003) indicated that early use of e-commerce was mainly driven by a combination of management enthusiasm and the need for improved communication. In spite of the widespread acceptance of e-business adoption in large organizations, the extent of e-business usage varies widely among SMEs. There is evidence showing they are indeed utilizing e-business, but not to its full potential (Kula and Tatoglu, 2003; Eshun and taylor, 2009; Hunaiti et al, 2009, Al-Weshah et al. 2011). E-business in SMEs is currently a real growth area, which is why it makes a real contribution to the economy (Lee and Cheung, 2004). Moreover, MacGregor and Vrazalic, (2006) showed that e-commerce technology has the potential to become a major source of competitive advantage to small business because it is a cost effective way of reaching customers around the world, as well as being a means of competing on equal terms with larger counterparts. Sanchez et al. (2007) stated that e-business has great potential for developing SMEs through more effective use and better integration of e-business processes, Al-Weshah et al (2011) also investigated utilising the e-environment to gain market share in local, regional, and international markets in Jordanian handicrafts sector. They found that SMEs in handicraft have initial attempts to use E-electronic in their activities, however, these attempts are still in embryonic stages and they do not use E-networks effectively to gain market share

E-business has provided a unique opportunity for SMEs to be more competitive and to do business in a global environment (Beheshti and Sangari, 2007, Al-Weshah et al. 2011). It is also suggested that there has been rapid growth in the use and adoption of e-business by SMEs. This new business technology also presents the opportunity for new ways to do business, giving rise to a new, and more flexible type of SME that is more successful in doing business. In developing countries there is, however, a lack of empirical evidence regarding the adoption and use of e-business in organizations, and in particular in SMEs. Neither has previous research sufficiently explained the stages by which e-business matures, nor the factors' influencing it's among SMEs, particularly in the communication sector. E-business impact on SMEs in developing countries is similarly under researched. This study visits and reviews the literature that examines both enablers and barriers associated with the adoption of e-business by SMEs.

E-Business Enablers

The reviewing of literature identified some factors that motivate e-business adoption by SMEs in developed and developing countries (Al-Qirim, 2005; Jennax et al, 2004; Levy et al, 2005; Stockdale and Standing, 2004, Al-Weshah et al. 2011) and also provided evidence of a relationship between e-business enablers with the level of this adoption. Seyal et al. (2004) found that governmental support and incentives are significant in influencing the adoption of e-business by SMEs in Pakistan. For Taiwanese SMEs, Chen's (2004) stated that E-business is used to reduce costs and increase sales, and for New Zealand SMEs.More recently, in a survey conducted in Germany, the US, France and Denmark, Beck et al (2005) pointed out that improved customer service and increased sales, are the main enablers of e-business adoption. Kaynak et al. (2005) suggested that reaching new customers and markets and reducing costs are the most important enablers, while increased sales, time savings and customer satisfaction are of no significant for motivating the adoption of e-business by SMEs in Turkey.

A qualitative study by Stockdale and Standing (2004) which is investigated enablers and barriers found that owner/ manager support and government initiatives are the crucial motivators in this regard. Chong and Pervan's (2007) survey of Australian SMEs showed that competitive pressure and government initiatives are the most significant factors determining the extent and deployment of e-business adoption there, followed by the opening of new markets and the reduction of costs, while organizational factors played no role whatsoever. Chen and McQueen's (2008) investigated the motivators and inhibitors affecting e-business adoption by SMEs in New Zealand, also stated that owner/manager support and external pressure in the form of competitors, trading partners, the improvement of customer relations and efficiency, the expansion of the customer base and time savings, as the most important motivators, while saving communication costs, improving customer satisfaction and coordination with suppliers are of no importance. They also pointed out that owner/managers are the most significant players driving such adoption.Scupola's (2009) survey of SMEs in Denmark and Australia indicates that top management support (including CEOs) is the most significant enabler in both countries; the next most important are employees' IS knowledge and pressure from customers. The survey found that competitor and supplier pressure are not great significance, however. The role of government incentives was the greatest weight for Australian SMEs, but did not feature for Danish ones.

A number of researchers (Grandon and Pearson, 2004; Raymond et al., 2001) divided E-business enablers into four groups: activity enablers, managerial enablers, competitive enablers and organizational enablers. Drew (2003) and Keoy et al. (2006) stated that there are only two enablers, namely, external and internal enablers. Therefore, the present study aims at exploring the motivation for e-business adoption by Jordanian SMEs in the communications sector. In order to group the characteristics of such enablers, the present study proposes different classification which is built on the findings of the literature review and related to the Jordanian context. More specifically, the study proposes three categories of enablers for E-business adoption in SMEs, namely as shown in Table 1, market enablers, external enablers and organizational enablers. The table shows the factors which are chosen for this investigation and provides a rational attempt to identify which of these factors are significant.

E-Business Barriers

By reviewing the literature on e-business barriers, researchers found evidence that there is a relationship between such barriers and the adoption of e-business. For instance, Al-Weshah et al. (2009) concluded that lack of top management support and lack of staff skills were the major barriers for information technology adoption in Jordanian banks. SMEs report a range of barriers that they perceive to be obstacles to their attempts to access e-business markets (Al-Weshah et al., 2011; Chen, 2004). Several researchers also found that e-business adoption by SMEs is still at a low level (Kapurubandara and Lawson, 2006, 2009; Pavic et al, 2007; Al-Qirim, 2007b; Scupola, 2009). Cloete et al. (2002) also

revealed a number of perceived barriers to e-business in African SMEs including security and legal issues and a lack of IT skills are the major factors inhibiting the adoption. Another finding by Lawson et al. (2003) quantitative study to determine the main factors affecting e-business adoption by Australian SMEs found that security issue is the greatest barrier, followed by cost and the lack of government initiatives. This evidence is supported by a more recent study by Asing-Cashman et al. (2004) that investigated the levels of e-business adoption in Malaysian SMEs. They showed that lack of security, high cost of implementation and the lack of expertise staff, in that order, are the major inhibitors.

Table 1: Summary of E-business Enablers of SMEs According to Literature Review

Market Enablers	
Reaching new customers	Kaynak et al, 2005; Chen and McQueen, 2008
Enhancing customer/suppliers relation	Chen and McQueen, 2008
Entering new markets	Levy et al., 2005; Kaynak et al, 2005; Chong and Pervan, 2007, Al-Weshah et al. 2011
Enhancing customer service	Beack et al, 2005
External Enablers	
Customer demand	Scupola, 2009
Supplier request	Pearson and Grandon, 2004
Competitive pressure	Chong and Pervan,2007; Chen and McQueen, 2008
Government incentives	Seyal et al, 2004; Stockdale and Standing, 2004; Chong and Pervan, 2007; Scupola, 2009
Organizational Enablers	
Reducing costs	Chen, 2004; Kaynak et al, 2005; Chong and Pervan, 2007
Management support	Grandon and Pearson, 2004; Al-Qirim , 2005/2007b; Stockdale and Standing, 2004; Chen and McQueen, 2008; Scupola 2009
Enhanced revenue	Chen, 2004; Beck et al, 2005

Chen's (2004) survey of e-business adoption by SMEs of less than 250 employees in Taiwan found a number of barriers, with cost and the lack of IT skills being the two foremost. Wymer and Regan (2005) found that US SMEs in terms of the cost of implementation, security and government rules and regulations to be respectively the three most important barriers. According to Levy et al. (2005), UK SMEs have a concern about the risk of fraud (i.e. security) and the costs of technology are the most significant barriers, while lack of management support and employee expertise has no significant. MacGregor and Vrazalic (2005) found that the greatest barriers among Swedish SMEs are the unsuitability of e-business for a company's products and services, but other factors such as security issues, the high costs of investment and the lack of knowledge did not figure. Kartiwi and MacGregor (2007) similarly found that Swedish and Indonesian SMEs view unsuitability as a barrier, as well as lack of technical knowledge, security and the time to implement such solutions.

Kapurubandara's and Lawson (2006) survey of Sri Lankan SMEs classified political barriers and lack of skills at the top of the list, while Chen and McQueen's (2008) qualitative study of New Zealand SMEs highlighted the inhibitory aspects of security issues, costs of implementation and insufficiency of customer access to the Internet as acting to curb the growth of e-business uptake more than other factors such as lack of skills and compatibility. To classify the characteristics of barriers, the present study proposes different classificatory techniques. Based on the literature review, a model that modifies those of Kuan and Chau (2001), Zhu et al (2003), Wymer and Regan (2005), Del-Aguila and Melendez (2006) and Kapurubandara and Lawson (2006) has been developed. The three categories of technological, organizational and external barriers have been proposed. Technological barriers are subcategorized into security issues, costs of implementation and network quality. Organizational barriers are classified into unsuitability, lack of expert staff and lack of time for implementation, while external barriers comprise low use by customers and suppliers, the stability of government policy, a concern for the cultural environment, and legal and regulatory barriers. The results of the literature review regarding business barriers are shown in Table 2. By reviewing the literature, key E-business barriers are categorized under

the headings of "technological barriers", "organizational barriers" and external barriers", as explained in subsequent sections

Table 2: Summary of E-business Barriers of SMEs According to Literature Review

Technological Barriers	
Security issues	Lawson et al 2003 ; Levy et al, 2005; Wymer and Regan 2005; Kapurubandara and Lawson, 2006; Kartiwi and Macgregor 2007; Chen and McQueen 2008
Cost of implementation	Levy et al, 2005; Wymer and Regan 2005; Kartiwi and Macgregor 2007; Chen and McQueen 2008
Network quality	Kapurubandara and Lawson 2006
Organizational Barriers	
Unsuitability for business	OECD 2004; MacGregor and Vrazalic, 2005; Kapurubandara and Lawson 2006 ; Kartiwi and MacGregor 2007
Lack of expert staff	Cloete et al 2002; OECD 2004; Chen 2004; Asing- Cashman et al 2004; Kapurubandara and Lawson 2006; Kartiwi and MacGregor 2007, Al-Weshah et al. 2011.
Lack of time for implementation	Kartiwi and MacGregor 2007, Al-Weshah et al. 2011
External Barriers	
Low use by customers	Chen and McQueen 2008,
Stability of Government policy	Lawson et al 2003; Wymer and Regan 2005; Kapurubandara and Lawson 2006
Concern for the cultural environment	Kapurubandara and Lawson 2006
Legal and regulatory environment	Cloete et al 2002; Wymer and Regan 2005; Kapurubandara and Lawson 2006

The Study Aim and Objectives

The current study aims at investigating relationships between e-business growth and e-business enablers and barriers of SMEs in Jordanian communication sector. More specifically, the study objectives are to (1) identify the significant enablers of e-business growth by SMEs in Jordanian communication sector; (2) identify the significant barrier of e-business growth by SMEs in Jordanian communication sector; (3) propose recommendations to decision makers in Jordanian communication sector to enhance e-business growth.

DATA AND METHODOLOGY

The aim of this study is to investigate the relationship between the stages of e-business growth and e-business enablers and barriers. This relationship will be determined by the key enablers and barriers seen from the managerial viewpoint, and by evaluating the stages of e-business growth in order to discover the stages of growth of e-business in the Jordanian context especially communication sector. To achieve this aim, the study must obtain the various perceptions of the key Jordanian managers engaged in this activity in communication SMEs. The present study attempts to identify factors associated with SMEs' adoption of e-business, including barriers and enablers impacting on this adoption. As a result, the quantitative approach is employed since it describes and measures phenomena (Collis and Hussy, 2003). Naoum (2007) agreed that quantitative research focuses on objective fact finding based on evidence and records, in order to test theories and concepts of research with hard, reliable data.

The aim of this research can be achieved through survey questionnaires distributed to participants with the aim of revealing their individual understandings, the meanings behind the stages of growth of e-business and the factors associated with them. Five Likert scale was used to score the responses. After designing an early draft of the questionnaire and to ensure validity, the questionnaire was piloted twice in order to ensure that the questions were easily understood. Questionnaire pre-testing was undertaken by sending the questionnaire to 15 pilot respondents, composed of academics and managers from Jordan. To test the questionnaire reliability, the Cronbach Alpha was used as the most common measure of reliability (Field, 2009). The calculated cronbach alpha was 94.7 percent which is accepted value for reliability.

For the main survey, the target population was SMEs in the Jordanian communications sector. The definition of SMEs adopted by this study was based on that of small and medium-sized firms used by the

Jordanian MICT of "10-250 employees". The sample was obtained from Jordanian Ministry of Communication. All companies in the sampling were surveyed. The personal delivery and collection method of questionnaires was used. The response rate to the survey was 86 per cent (306 returns, of which 301 were usable). For data analysis, the Pearson correlation coefficient will be used to identify the strength and direction of relationship between the stages of e-business growth and e-business enablers and barriers

THE STUDY RESULTS

The study identifies major sources of motivation for e-business adoption in Jordanian communication sector. The results show that there are various sources of motivation for e-business adoption. However, top management is the most important motivation source for e-business adoption in Jordanian communication sector. The motivation sources for e-business adoption are shown in Table 3. This finding supports the previous study by Al-Qirim (2007b) and Besheshti and Sangari (2007), who found that the top management is clearly the most influential motivator for e-business..

Table 3: Source of Motivation for E-business Adoption

Main Motivator	Percentage
54.5	Top Management/ CEO
3.3	Employees
9.0	Customer
6.3	Supplier
26.9	Business partner
100	Total

Table 3 shows that more than half (54.5 per cent) of the responding SMEs agree that top management is the main source for motivation, whilst a very small percentage thought that employees could be a source of motivation. About a third of SMEs stated that their business partners are the main source for motivating e-business adoption. This previous discussion presents the analysis of SMEs' responses. The results are that the significant majority, over 90 per cent, of the respondents SMEs were medium-sized (between 50-250 employees), and four fifths of them had more than JD250, 000 turnover; more than two third had been operating between one and ten years. Interestingly, top management was found to be the main motivator of adoption of e-business in SMEs. This implies that the majority of SMEs are motivated by top management to adopt new technology. This finding echoes previous studies conducted by Gilmore et al (2001), Kapurubandara and Lawson (2009), Scupola (2009) and Ramdani et al (2009), all of whom found that decisions adopt are usually made by managers or owners.

The results show that there are high levels of significance for e-business enablers (market, external and organizational enablers) with the three growth stages of e-business (email exchange, information exchange and Web presence); the strength of association ranges from high to moderate. The respondents' attitudes suggest that different enablers have different effects on the various categories of e-business stages. Interestingly, the information stage was found to be of the greatest significance for e-business enablers out of all the stages. The need for e-business enablers is particularly prevalent for the organizations in the selected stages of e-business growth, and there may be a strong emphasize on the need for motivators in order to progress through these stages. One possible explanation is that organizations' advertising of their products or services on their websites allows more customers to find out about them; this could be a motivation for adoption. Correlation matrix between the e-business stages of growth and its enablers is shown in table 4 below

Table 4: Correlation between the E-business Stages of Growth and Its Enablers

Email Exchange Pearson correlation Sig. (2-tailed)	0.368**	0.366**	0.346**
Information exchange Pearson correlation Sig. (2-tailed)	0.494**	0.496**	0.480**
Web presence Pearson correlation Sig. (2-tailed)	0.410**	0.392**	0.388**

***Correlation is significant at 0.01 (2-tailed)*

Table 4 shows that respondents' attitudes at the stage of information exchange focuses more on motivation from external enablers (0.496**), such as support from government or competitive pressures. One possible explanation is that organizations at the different stages may have different goals they want to achieve or benefits they want to attain, and may expect more support from government and more training to encourage them to adopt e-business. However, E-mail exchange and Web presence focus more on motivation from market enablers (0.368**) and (0.410**) respectively.

These findings are consistent with previous research by Qualye (2002), Levy et al, (2005), Keoy et al (2006), Powell et al, (2006), Chong and Pervan (2007), Ashrafi and Murtaza (2008) Harindranth (2008), Scupola (2009) and Alam (2009), all of whom found that these enablers motivate the adoption of e-business SMEs, and that SMEs still tend to use e-business before receiving its benefits such as reduced costs, enhanced revenues and improved customer services. The results also reveal that these enablers influence the level of adoption and use of e-business. For example, Daniel et al (2002) found that a significant factor in e-business is organizations' desire to minimise costs, which leads to them increasing their access to the global marketplace by developing e-business services to a greater extent so that they can benefit from a wider customer base. Pavic et al (2007) suggest that there is a synergy between e-business growth within SMEs and the creation of competitive advantage. Many SMEs invest heavily in e-business to meet customer demand and improve customer relations (Chibelushi and Costello, 2009). As with enablers, stages of e-business growth show high levels of significance as relates to all three barriers. The respondents' attitudes show high levels of significance for e-business barriers (technological, external and organizational barriers) with the three stages of e-business growth (email exchange, information exchange, and web presence). Correlation matrix between the e-business stages of growth and its barriers is shown in table 5 below

Table 5: Correlation between the Stages of E-business Growth and Its Barriers

Email Exchange Pearson Correlation Sig. (2-tailed)		0.449**	0.244**	0.372**
Information exchange Sig. (2-tailed)	Pearson correlation	0.498**	0.449**	0.405**
Web Presence Sig. (2-tailed)	Pearson correlation	0.458**	0.475**	0.467**

***Correlation is significant at 0.01 (2-tailed)*

Table 5 shows that the strength of association ranges from high to moderate. The respondents' attitudes suggest that the different barriers have different effects on the various stages of e-business growth. Interestingly, a relationship of low significance was found between email exchange and organizational barriers (0.244**). This is perhaps an anomaly. One possible explanation is that organizations are at this

level still in the initial stages of using e-business activities such as email, and their staff is familiar with these activities. The most important barriers for e-business growth are technological issues. Respondents' attitudes provide empirical evidence that organizations in the three stages of e-business adoption found technological barriers such as security issues, quality of the Internet and cost of implementation to be the most prominent.Unfortunately, organizations at these levels cannot develop e-business without contact with these barriers. This hinders them from moving to the next stages of growth.

The lack of secure websites and the costs of initial implementation make them even more reluctant to develop e-business to the next level. The present results also reveal that the organizations which have reached the Web presence stage view organizational barriers such as lack of expert staff and lack of time for implementation to be the most prominent barriers to the adoption of e-business. It may be noted that the higher stages need highly skilled IT staff to develop from the simpler to the more complex e-business processes, and that the lack of expert staff, lack of time for implementation and a perceived lack of fit between higher levels of technology and an organization's offerings affects decisions as to whether or not to move to next stages of e-business. Organizations at the third stage (Web presence) find that all barriers are of the highest significance, which inhibits organizations at stage three from moving on.

However, Jordanian SMEs are still at the lower stages of adopting e-business because Jordan is a developing country that only started using the Internet a few years ago. These findings are consistent with previous research by Jones et al (2003), Cloete et al (2002), Lawson et al (2003), Chen (2004), Wymer and Regan (2005), Levy et al (2005), MacGregor and Vrazalic (2005), Kapurubandara and lawson (2006,2009), Kartiwi and macGregor, (2007) Chen and McQueen (2008), and Al-Weshah et al. (2011). They all found that there are significant relationships between the levels of e-business adoption by SMEs with the e-business barriers that hamper such adoption.

CONCLUDING COMMENTS

The current study aims at investigating relationships between e-business growth and e-business enablers and barriers by SMEs in Jordanian communication sector. These relationships were determined by the key enablers and barriers seen from the managerial viewpoint, As a result, the quantitative approach was employed in this study. More specifically, correlation coefficients were used to identify the strengths of relationships between e-business growth and e-business enablers and barriers.

The result reveals that there is a highly significant positive relationship between stages of e-business growth (email exchange, information exchange, and Web presence) and certain enablers and barriers; however our strength of association was highly to moderate. The study reveals many gaps in the current state of knowledge and understanding of the factors influencing e-business adoption, and in particular a lack of attention to the contextual aspect of such adoption by SMEs in developing countries, in contrast to the advanced state of research for the developed world. The present study attempts to reduce this gap by conducting an empirical study examining the stages of growth of e-business adoption and the factors influencing the decisions of SMEs.

A number of previous studies indicated that the factors influencing the decision to adopt and to develop e-business is one of the most important issues facing many SMEs. The literature review reveals, however, that despite e-business importance, there are few studies in developing countries, as well as a lack of empirical evidence to validate the adoption of e-business by SMEs. The research in this field is still in its early stages in most developing, in particular in Jordan. Such research as has been carried out on Jordan has tended to focus on adoption generally, at the expense of investigating the level of e-business use and the factors influencing decisions to adopt. This trend is consistent with the researcher's focus in other developing countries, as is the wealth of studies on developed nations. This study focuses exclusively on Jordanian SMEs' decisions to adopt and develop e-business, as well as the e-business applications they

choose to use. The contribution of this paper can be judged from a number of perspectives. It presents a broad picture of how SMEs currently use e-business and comprehensively examines the factors influencing SMEs' decisions to adopt. The study explains the stages of e-business growth within Jordanian SMEs, particularly in the communications sector. The empirical work is validated for the Jordanian context by the findings that the survey respondents report these stages actually to exist. The study findings make a significant contribution to reaching an understanding of the growth of e-business and the factors influencing decisions to adopt and use it. The finding of this study determine the relationship between the stages of growth of e-business and its enablers and barriers in Jordanian SMEs, particularly those in the communications sector.

The empirical research also examines the stages of growth of e-business in Jordanian SMEs and the associated factors, research that would benefit policymakers and top management by the insight and information it provides by developing their strategies in relation to adoption and developing of e-business. The Jordanian government should plan strategies to achieve a new, high quality Internet infrastructure and raise national awareness of the Internet and e-business by increasing investment in the ICT infrastructure. Secondly, because most studies on e-business adoption within SMEs deal with SMEs in developed countries, these findings can help understand whether SMEs in developing countries and in particular in Middle East and Jordan engage with e-business in a similar manner. Significantly, this study provides rich data for these under-researched areas through its pioneering investigation of e-business enablers and barriers in Jordan and how they are seen by SMEs. It informs researchers and business planners about the growth and development of e-business in Jordan and allows them to compare and contrast developments there with the growth of e-business in other developing countries.

The Study Limitations

Like any research, this study has some limitations. Firstly, it was limited to the communications sector in a specific, small, country, so caution must be exercised when generalising the findings. In order to clarify the comprehensiveness picture of e-business adoption, future research could be conducted in several sectors and in other developing countries, both in the Middle East and elsewhere. This empirical study provides a comprehensive view of business factors, but there are potentially other enablers and barriers that could influence the adoption and development of e-business. Although the study provides a wide-ranging view of factors influencing the adoption of e-business, SMEs have several characteristics that could influence that process. Secondly, the study is also limited to B2C e-business from the viewpoint of the provider. The impacts of all enablers and barriers are seen from this perspective, and it might therefore be seen as a limitation that no user input was provided. This issue could be addressed by further research. Finally, the study has some methodological limitations. The quantitative approach, applied in particular in the form of a questionnaire, does indeed provide a wide scope for investigation, but perhaps less so for detailed explanation, whereas a qualitative focus would be narrower but more exhaustive. Consequently, further research could examine qualitatively relevant new applications which could be included as part of the adoption framework.

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THE ROLE OF TECHNICAL ANALYSIS IN THE FOREIGN EXCHANGE MARKET

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ABSTRACT

This paper provides evidence that currency spot prices are autocorrelated, which indicates that technical analysis in foreign exchange trading can and should take a leading role for analyzing expected exchange rate movements. The Augmented Dickey-Fuller test was used to test the Random Walk Hypothesis on the USD/CHF exchange rate prices in a one minute frequency timeline for 10 randomly selected Fridays. Under the Extreme Values Method, calculations were based on the High-Low ask price spread and not on the volatility of closing prices. The main contribution of this paper is that new evidence is generated providing reasonable basis to discard the Efficient Markets Hypothesis in its weak form. The findings lead to embracing the Dow Theory, rather than the Random Walk approach, and conclude that markets are not efficient in their weak form.

JEL: F31; G14; G15

KEYWORDS: price range, volatility, Dow Theory, random walk, foreign exchange, weak form market efficiency

INTRODUCTION

Ever since prices have been put in graphic form, trends and patterns have been presented in a way that investors could more easily understand. When Charles H. Dow first published his theory, the big picture came into view, allowing traders to find sense in a seemingly senseless Wall Street market. During the first half of the 20th century, Dow Theory became a well known set of rules for understanding market mechanics. Later, in the middle of the century, the Random Walk approach (Osborne, 1952; Fama, 1965) seemed a plausible explanation to the frustration of speculators who, counting on the charts, suffered mounting losses at the hands of a market that did not seem to follow the rules. The Efficient Markets Hypothesis (Fama, 1970) followed as a manner of justifying that no one can systematically obtain abnormal returns, and thus beat the market. Much research effort went into developing and reinforcing the view that any attempt to beat the market would be unsuccessful due to a high level of market efficiency, erasing any opportunity to win in a systematic manner.

There may not be solid ground, though, to build such thinking. If it can be shown that markets are predictable, with a repeating pattern or continuous trend that replicates itself with a certain frequency, then Dow Theory should not be discarded. Still, it is studied in such a way that new evidence may arise and new postulates may be settled. In this regard, new trading technologies that make high frequency graphing possible rely on the possibility to redefine our understanding of the cognitive-behavioral nature of a financial market. Due to a man-made common area, as well as the inclusion of the best of technology in operations performance, the foreign exchange market is, over all other financial markets, the best field to understand the express and disguised nature of market prices. The objective of this paper is to uncover the underlying essence hidden from academics and practiced by traders, even when traders themselves may not be able to explain it. Our conclusion in this sense is that price ranges are dependent between them. But neither academics nor practitioners seem to notice this phenomenon. Perhaps, the reason is that advances in technology had been gradually penetrating the trading sphere delaying the revelation of

the nature. However, the reason could be that the explanations of the Efficient Market Hypothesis still resound in many minds and a sense of fatalism surrounds the sector.

A Unit Root test was conducted to demonstrate dependence among price ranges. A *price range* is defined as the spread between the high and the low market ask price for a given currency pair in a given time frame. This model has been applied to a dataset of high frequency data, - minute based timeline - that consists of 10 randomly selected Fridays in the USD/CHF foreign exchange market. This research sought to demonstrate that market prices show dependence from one time period to the next. The paper is structured as follows. After the introduction a review of the relevant literature is provided. Section 3 focuses on the data employed and the methodology used. Section 4 provides a discussion of the results, and the paper concludes in section 5 with a summary.

LITERATURE REVIEW

Microstructure theory studies the mechanics of a financial free market (Flood, 1991). The meaning of spreads, the geographic location of exchange centers, the interaction between market makers and individual investors, and the seasonality of volatility, impact of news, trade volume, and transaction costs among other aspects are used to explain the functioning of the market. Within this theoretical framework, volatility behavior has been studied by Beillie and Bollerslev (1991), Bollerslev and Domowitz (1993), and Fang (2000), among others. These authors have uncovered evidence of seasonal patterns in volatility among different market locations, enlightening the understanding of global spot financial markets.

In a seminal paper, Beillie and Bollerslev (1991) identified high volatility levels during the opening of trading in the principal foreign exchange markets of Tokyo, London, and New York, with New York having the highest intraday volatility of the three. The reason is said to be the junction of the afternoon London session with the New York morning session. A lesser volatility is observed in the junction of the London morning and the Tokyo afternoon sessions. Volatility information is useful to traders because it provides a measure of activity, giving indications of both trading volume and trade frequency. According to the liquidity theory proffered by Admati and Pfleiderer (1989), traders tend to gather in the most liquid part of the session, and this is precisely the moment of the highest volatility. But even when they detect a statistically significant negative first order serial correlation, Beillie and Bollerslev concluded in their paper that their findings appear largely consistent with the efficient markets hypothesis.

Contrary to Beillie and Bollerslev, Longworth (1981) concluded that markets are not efficient. He used spot and forward rates for USD and Canadian dollars during the period from July of 1970 to October of 1976, and found that spot rates could be used as predictors of forward rates. He concluded that a speculator looking at economic variables during that time could have made extraordinary profits thorough trading the Canadian dollar.Extreme high-low spreads, rather than currency prices, give deeper insight to the speculative nature of financial markets when it comes to volatility measures (Parkinson, 1980). The variance is the distance of prices to their mean and gives a measure of volatility. Meanwhile, the High-Low price spread carries more information because it captures the extension of the price movement for any specific point in time. Parkinson shows that the extreme values method provides a much better estimate of a diffusion constant than does the traditional method. Little attention has been given to this aspect of price behavior in the foreign exchange markets. We state that the high-low price range provides better information than the price itself. The high-low price range explains the behavior of traders when it comes to watching the spot price in the charts.

Taylor and Allen (1992) report the use by traders of technical analysis as the best tool when trading currencies. They show that analysts rely on the fundamentals of the economy for the long run or overall picture, and utilize technical analysis for short-term trades and entry/exit signals. Levy (1966) shared the view that technical analysis serves as a supplement to fundamental analysis. He observed that technical

analysis may be as good, or perhaps more satisfactory than fundamental analysis in supporting trading decisions. However, trading based solely on technical analysis entails a careful study and close watch on price charts. The high-low range carries more information than the daily closing price.

DATA AND METHODOLOGY

This paper uses intraday USD/CHF ask price ranges from the following randomly selected Fridays: January 9, 2009; September 4, 2009; November 13, 2009; February 19, 2010; April 8, 2010; June 25, 2010; August 20, 2010; October 15, 2010; December 10, 2010; and March 18, 2011. The intraday price ranges are defined as follows:

$$Price\ Range = High_{price} - Low_{Price} \quad (1)$$

Since the main scope in this paper is to test for the market efficiency hypothesis on the USD/CHF exchange rate, price ranges are transformed into serial differences as follows:

$$\Delta(Price\ range)_t = Price\ range_t - Price\ range_{t-1} \quad (2)$$

The descriptive statistics for the price ranges differences are shown in Table 1, in which can be observed from skewness that there have been more positive changes than negative ones within each Friday and across all Fridays selected. As a whole, price ranges can be described as a fat-tailed distribution time series which means the presence of extreme values explained by the stylized fact in financial time series as conditional volatility. Nevertheless, in some cases the kurtosis value is quite low as compared to the other dates. In turn the Jarque-Bera value for Normality test decreases significantly and would explain that in some cases price ranges first differences can be approximated by a Gaussian distribution.

Table 1: Descriptive statistics USD/CHF in price ranges differences.

	Jan 9, 2009	Sep 4, 2009	Nov 13, 2009	Feb 19, 2010	Apr 8, 2010	Jun 25, 2010	Aug 20, 2010	Oct 15, 2010	Dec 10, 2010	Mar 18, 2011
Mean	-0.004	-0.000	0.000	-0.002	0.000	-0.001	-0.002	-0.000	0.000	-0.001
Median	-0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.100
Maximum	44.8	17.3	7.1	35.9	6.8	18.1	12.3	21.2	7.6	28.7
Minimum	-20.6	-16.7	-6.5	-21.4	-8.0	-17.6	-12.3	-11.7	-5.7	-17.4
Std. Dev.	4.046	1.869	1.400	2.483	1.398	2.289	1.989	2.055	1.504	2.574
Skewness	1.299	0.346	-0.003	1.808	0.103	0.300	0.111	1.449	0.176	0.850
Kurtosis	17.54	20.26	5.94	39.14	5.88	11.10	8.26	22.16	4.75	20.97
Jarque-Bera	12441.46	17119.97	509.79	81827.91	497.69	3949.40	1660.02	22273.78	189.34	19483.90
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum	-5.60	-0.40	0.20	-2.70	0.60	-1.10	-2.10	-0.30	0.50	-1.30
Sum Sq. Dev.	22374.46	4807.08	2775.16	9174.27	2804.42	7520.93	5677.35	6005.73	3220.05	9503.47
Observations	1368	1377	1416	1489	1437	1436	1436	1423	1425	1435

Descriptive statistics for the range price differences in USD/CHF for different randomly selected Fridays. The price range is given by ($High_{price} - Low_{price}$) x 10,000 and the Price Range Differences are given by $\Delta(Price\ Range)_t = Price\ Range_t - Price\ Range_{t-1}$.

The random walk model states that a change in the stock price from one period to another is completely random. The representation of the random walk hypothesis is described as

$$y_t = y_{t-1} + \varepsilon_t \quad (3)$$

Then it is supposed that $\Delta y_t = \varepsilon_t$ in such a way to accept the market efficiency hypothesis at least in its weak form. A variation of (3) relates to a random walk model with a deterministic component such as

$$y_t = y_{t-1} + a_0 + \varepsilon_t \quad (4)$$

Testing the market efficiency hypothesis is to testing for $a_1 = 1$ or the presence of a unit root as in the following model

$$y_t = a_1 y_{t-1} + \varepsilon_t \quad (5)$$

In this sense as described by Dickey and Fuller (1979), it should be the same to testing for $\gamma = 0$, where $\gamma = a_1 - 1$, in the following equations

$$\Delta y_t = \gamma y_{t-1} + \varepsilon_t \quad (6)$$

$$\Delta y_t = a_0 + \gamma y_{t-1} + \varepsilon_t \quad (7)$$

$$\Delta y_t = a_0 + \gamma y_{t-1} + a_2 t + \varepsilon_t \quad (8)$$

A generalized expression of (8) would be an autoregressive process as

$$\Delta y_t = a_0 + \gamma y_{t-1} + a_2 t + \sum_{i=2}^{p} \beta_i \Delta y_{t-i+1}\, \varepsilon_t \quad (9)$$

This paper performs the Augmented Dickey-Fuller test on equation (9) to test for the presence of a unit root in USD/CHF price ranges; if it exists then it is not possible to reject for the random walk model and consequently not possible to reject the market efficiency hypothesis in its weak form.

RESULTS

Table 2 shows the Dickey-Fuller (DF) unit root test results based on equation (8), in which the coefficients' statistical values are compared with those of DF critical ones. Since the scope is to determine whether the exchange rate market is efficient or not on its weak form, attention is paid on the *γ*'s coefficient value. Given the ten Fridays selected, it is observed that γ's statistical t-values are greater than the DF critical ones except for October 15, 2010.

Table 2: Unit Root Test

Friday	Jan 9, 2009	Sep 4, 2009	Nov 13, 2009	Feb 19, 2010	Apr 8, 2010	Jun 25, 2010	Aug 20, 2010	Oct 15, 2010	Dec 10, 2010	Mar 18, 2011
a_0	0.386	0.155	0.324	0.782	0.267	0.614	0.370	0.105	0.531	0.957
	(2.004)	(1.769)	(4.401)	(5.374)	(3.404)	(5.353)	(3.599)	(1.109)	(6.294)	(6.601)
a_2	0.0006	0.0003	0.0003	-0.0001	0.0001	0.0005	0.0001	0.0001	0.0001	-0.0002
	(2.461)	(2.394)	(3.552)	(-1.206)	(1.267)	(4.076)	(1.039)	(1.165)	(1.677)	(-1.137)
γ	-0.177 ***	-0.160 ***	-0.294 ***	-0.226 ***	-0.176***	-0.410 ***	-0.203 ***	-0.093 *	-0.324 ***	-0.318 ***
	(-6.014)	(-5.219)	(-7.435)	(-7.695)	(-4.551)	(-9.298)	(-6.187)	(-3.402)	(-9.633)	(-10.449)

Null Hypothesis: γ has a unit root, Dickey-Fuller Test critical values: 10% level -3.128485, 5% level -3.412976, 1% level -3.964516.

As the unit root null hypothesis states, $\gamma = a_1 - 1$, this one can be rejected for the ten Fridays selected at the given three confidence levels. The exception as stated above is observed in October 15, 2010 where the unit root null hypothesis cannot be rejected at 5% and 1%. Since γ is not rejected to be different from

cero, then a_1 is different from the unit. Hence, the USD/CHF exchange rate process is not completely random in the statistical sense and the efficiency market hypothesis at least on its weak form can be rejected. Also, Table 2 shows the statistical significance of a trend (a_2) effect in the USD/CHF process. At the given confidence levels or DF critical values, in most of the cases the trend coefficient statistical t-values are less than those of the DF values meaning that there is no trend effect. The only two exceptions are in November 3, 2009 and June 25, 2010, where in the former the trend effect is not rejected at the 1% significance level and in the latter the trend effect cannot be rejected at any of the three confidence levels.

These results, however, do not lead to the assertion that a technical strategy will in fact generate abnormal results. This is up to the trader and not to the market. What we are saying is that the market is inherently inefficient at some level, and the trader will have to construct his or her own set of rules to find trades that take advantage of the fact. A successful trade may not be possible every day; there will be days with good opportunities and others without such opportunities. It may happen that a trading day brings good trading opportunities but the trader is unable to capture them.

CONCLUSION

The purpose of this research work was to provide new evidence as to accept or reject the Efficient Markets Hypothesis. Based on the foreign exchange market, ten randomly selected Fridays were used in a minute by minute timeline. A Unit Root test then was conducted in order to identify the autocorrelation of the price ranges. The principal contribution of this paper is that using the extreme value method we may stand for Dow Theory and defend Technical Analysis. Focusing attention on the high-low ask price spread rather than closing prices, a better information set is captured that may provide information on the nature of the foreign exchange market. In this sense, it is shown that price ranges have dependencies, reaffirming the use of chart observation in currency trading activity. Hence, Technical Analysis takes its prominent role in the foreign exchange market.Even when the results confirm an absence of efficiency, it must be considered that the tests were made on just one currency pair, that is, the Swiss Franc per US Dollar. Additionally, the tests were made on data collected in a different time frame. That is, data is collected in the 21st century when technology and the knowledge of the market is greater. Contrary to the stock market, where the efficient market hypothesis surged, this research relies in the foreign exchange market. Researchers must take these limitations into account.

These findings open a wide new field in financial markets research and challenge researchers to further develop historic tests employing price ranges rather than closing price quotes. Based on these results, the study of volatility should be further studied. In particular, a full market study of this phenomenon should be conducted to replicate the results of this study.

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A QUANTITATIVE MEASURE OF THE GRADUALIST APPROACH TO INTERNATIONALIZATION

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ABSTRACT

The goal of this research is to create a holistic global model which integrates the main theories and approaches used in researching company internationalization. The resource-based view of export strategy has shown the greatest capability of explaining deciding exports. The gradualist model of the Scandinavian school of thought has been widely utilized as an explanation of the appropriate methods and momentum for gradual export abroad. The second goal of this research is to demonstrate implementation of the gradualist models. The way of entering each international market by the companies, though being an easily-understood intuitive concept, nevertheless generates confusion from an operating point of view. Currently, there is no quantitative variable that can tell if a specific company, or sector, adheres to the guidelines of the gradualist model. For this purpose, we generate an easily-measured quantitative, continuous variable, which indicates the extent that companies adapt the thesis proposed by the Scandinavian school of thought.

JEL: M16

KEYWORDS: International priority index, Internationalization models

INTRODUCTION

Internationalization is an economic phenomenon that has awakened the interest of a great number of researchers. By internationalization we mean "a set of operations that facilitate the establishment of more stable relationships between a firm and the international markets, throughout a learning process of growing international involvement and patterns of development." Rialp et al. (2005).

The goal of this research is the creation of a holistic global model that integrates the main theories and approaches for researching company internationalization. The operations of companies abroad have been widely studied according to the strategy of entry into foreign markets. Regarding the export strategy, the resource-based view has demonstrated more ability to explain the determining factors of this strategy. On one hand, the gradualist model of the Scandinavian School has been widely used as an adequate measure of the appropriate ways and moments to perform a step-by-step entry into foreign markets.

The network model, which is of the no gradualist approaches, on the other hand, gives rise to the possibility of further studying and deepening our understanding of cooperative approaches to operating abroad. Without a doubt, other approaches such as the monopolistic advantage theory, the transaction cost approach, also contribute other points of view which help globally explain internationalization. However, given the literature examined here we consider the three approaches presented as the most relevant for discerning the decisive and determining factors of the internationalization strategy of companies. As a second research goal, we study the implementation of the gradualist models. The way companies enter each of the different international markets, while easily understood in an intuitive manner, still generates a great deal of confusion from the operating standpoint. There is no quantitative variable which discerns whether a company, or a sector, follows the guidelines of gradualist models or not. For this reason, based on the research developed by Davidson (1980, 1983) and Clark and Pugh (2001), we generate a variable

that is continuous, quantitative and easily-measured in order to indicate to what extent companies follow the theses proposed by the Scandinavian School.

The paper is structured as follows, in the second section a review and analysis of the literature of the subject matter and the theoric model proposed is presented, and in the third section the methodology for the creation a quantitative measure of the gradualist versus non-gradualist.

LITERATURE REVIEW

Throughout history, there have been numerous conceptual frameworks classified under the phenomenon of entry into foreign markets. Table 1 presents a summary.

Table 1: Conceptual Frameworks Which Explain the Phenomenon of Internationalization of Companies

Economic Approach	
Monopolistic advantage theory	Kindleberger (1969) Hymer (1976)
Internationalization theory	Buckley and Casson (1976, 1985)
Transaction cost theory	Anderson and Gatignon (1986)
Eclectic paradigm	Dunning (1979) (1980) (1988)
Gradualist Approach	
Uppsala model	Johanson and Vahlne (1975) (1977) (1990) Bilkey and Tesar (1977)
I-Model	Cavusgil (1980) Luostarinen (1980) Davidson (1980) Welch and Luostarinen (1988)
No Gradualist Approach	
International Network Approach	Johanson and Mattson (1988) Madsen and Servais (1997) Holmlund and Hock (1998) Hadley and Wilson (2003) Blomstermo et al. (2004) Johanson and Vahlne (2009)
International New Venture/Born global	Oviatt and McDougall (1994) Knight and Cavusgil (1996) Madsen and Servais (1997) Coviello and Munro (1997) Chetty and Blankenburg Holm (2000) Coviello (2006)
International Entrepreneurship	McDougall and Oviatt (2000) Kuemmerle (2002) McDougall et al. (2003) Rialp et al. (2005)

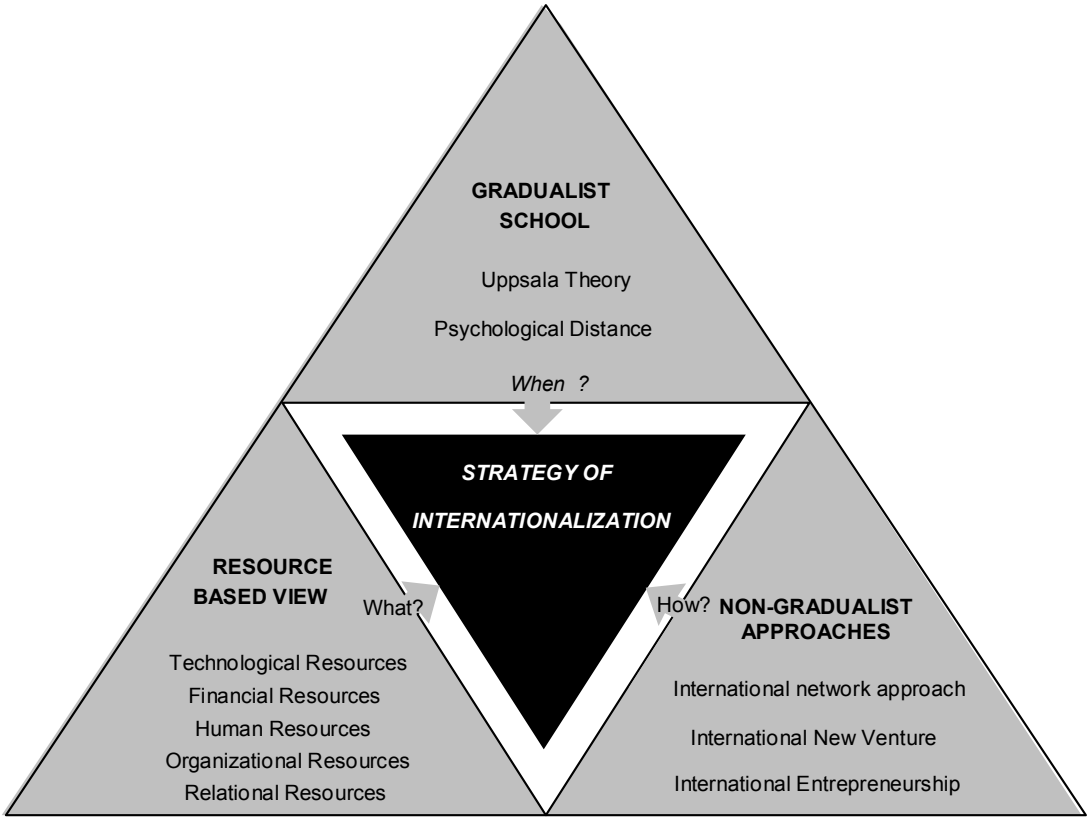
This figure shows the different conceptual frameworks which have been used to explain the phenomenon of internationalization of companies from different approach. This approach has been classified in Economic, Gradualist and No gradualist approach and inside of them have been identified different theories with his different work of research.

The theoretical model proposed can be observed in Figure 1. Contrary to what other research has shown, the fact that different theoretical approaches have contributed to the study of central aspects in the internationalization strategy of companies, does not mean that these approaches are contradictory or opposite. Rather, the frame of mind presented is the necessary complementarity of each approach.
Next we explain the main contributions of each theory presented.

Resources and Capabilities Approach

The study of the factors that exercise a determining influence on business competitiveness and the companies' results has been discussed throughout the years from different approaches and theories in the field of strategic management.

Figure 1: Holistic Model of the Study of the Phenomenon of Internationalization



This figure shows the general model of analysis, which explains the main objective of research.

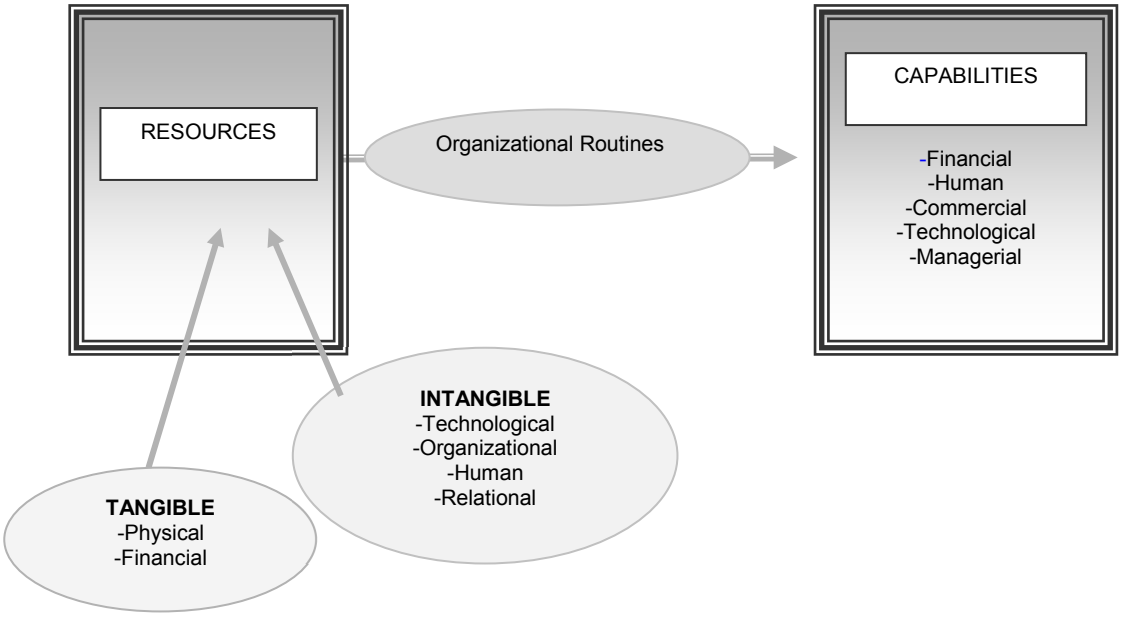
The Resource-Based View originated with the goal of "identifying the potential of a company to establish competitive advantages through the strategic identification and valuation of the resources and capabilities that it possesses or could attain." and is sustained by two key suppositions. On one hand, heterogeneity involves companies that are different due to the inequalities in possession of heterogeneous resources and capabilities in a given moment of time. Imperfect mobility occurs when resources and capabilities are not available for all companies in the same conditions (Barney, 1991).

As Claver et al. (2006) established, there have been numerous studies with the goal of determining the internal composition of company resources and determining the superiority of certain types of resources and capabilities for achievement and maintenance of a competitive advantage. Research such as that by Lippman and Rumelt (1982), who contribute the concept of casual ambiguity; Dierickx and Cool (1989), who argue there are assets that can only be created through a process of internal accumulation in the company and are not marketable, Grant (1991), who differentiates between resources, capabilities and organizational routines (taking the concept developed by Nelson and Winter, 1982) and adds the necessity for imperfections in the market for resources to be considered strategic; Amit and Schoemaker (1993), who contribute the concept of complementarity among resources; Hall (1993), Chi (1994), Lei *et al.* (1996), Teece (1998), Rouse and Dellenbach (1999), Sánchez (2001) or Winter (2003), who define the dynamic capabilities, the hierarchy of the capabilities and their relationship with the company routines, among others, have tried to analyze which characteristics of the resources and capabilities of the company provoke them to be more difficult or impossible to put on the market (Figure 2).

Among the set of resources of a company are the intangible resources. These are the ones that most easily meet these requirements that they are difficult to formalize and reproduce by competitors, they are

exclusive to a company (at least for a certain period of time) and provide it with superiority over competitors (Ramírez, 2004).

Figure 2: Resources and Capabilities Approach



This figure shows from the resource based view a classification of different resources and capabilities which have been divided in two approaches. In the one hand we can see a classification of firm resources into tangible and intangible resources and on the other hand organizational routines have been classified into different firm capabilities. Source: Adapted from Barney (1991)

The resources and capabilities approach provides us with an insurmountable opportunity to study the influence that these resources can have on the pattern of export behavior of the company. Therefore, we consider that these factors are defining independent variables in the configuration and definition of the process of internationalization. This process, from the perspective of the gradualist model, is gradual and incremental. However, at a certain point and in a global market, not the exclusive use of its own resources, but the use and recourse of cooperation agreements and alliances can provide added value to foreign strategies.

Uppsala Approach: Gradualist Approach

During the seventies, researchers belonging to the Uppsala or Scandinavian School carried out several empirical studies, whose main goal focused on obtaining empirical evidence on the process developed by the companies to carry out their internationalization strategy. They observed the gradual character in which operations were carried out as a main characteristic. It was determined by the psychological distance that the companies had to the foreign countries. That is, the companies directed their activity toward countries in which there was less psychological distance. We define psychological distance as the set of factors that impede or alter the flow of information between the company and the market: i.e., not only the physical or geographical distance, but also all characteristics related to differences in language, education, business practices, culture and industrial development (Johanson and Wiedersheim-Paul, 1975)

In relation to the aforementioned, there have been numerous studies (Klein and Roth (1990), Nordström (1991), Kogut and Singh (1988), Benito and Gripsrud (1992), Barkema *et al*. (1996) and Padmanabhan and Cho (1999); among others) that have examined the concept of psychological distance when identifying the process used by companies to selecting the destination country for their

internationalization operations, using different objective indicators that measure of this concept. Authors such as Kogut and Singh (1988); Benito and Gripsrud (1992), Barkema *et al*. (1996) and Padmanabhan and Cho (1999) approximate the concept of psychological distance through the concept of cultural distance, based on research developed by Hofstede in 1980. He developed an index for a set of countries that identifies cultural similarities and differences.

Other authors like Clark and Pugh (2001) measured the psychological distance through a construct made up of four independent variables. These were defined as "market size", "market affluence", "geographic distance" and "cultural distance." The authors establish the measurement of the variable based on research done by Ronen and Shenkar (1985) where different cultural groups of countries are identified based on reviewing empirical research that uses Hofstede's index. They took the difference between the index of the cultural group of the country of origin of the companies and the different foreign cultural groups, obtaining a measurement of the cultural distance with the different groups of countries or zones.

In view of the research done in this regard and given the subjectivity that underlies in the concept itself, we conclude that there is a theoretical uncertainty in the literature that impedes the development of a consistent model which permits measurement and implementation of the concept of psychological distance.

Therefore, when a company proposes an internationalization strategy, given that it lacks experience and regular information, it will begin with sporadic or irregular export activity, where the resources committed are limited. As the company acquires experience and knowledge, it will go through successive stages with more international involvement, which require more commitment of resources, also coinciding with a greater knowledge of the market through the experience acquired previously, and represents a different way of entry (see Figure 4).

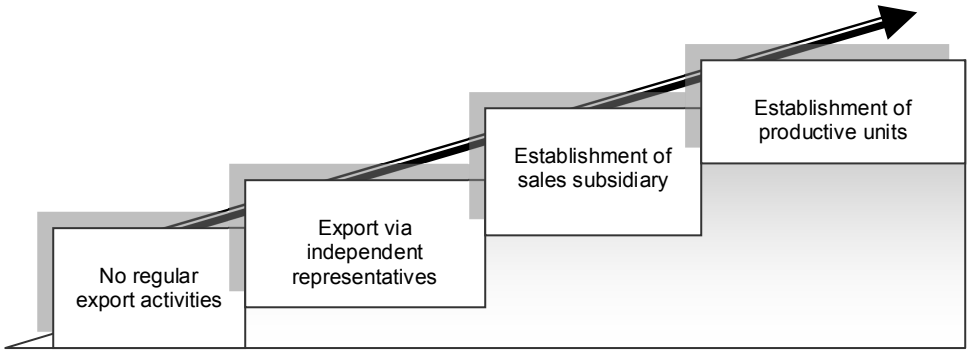
Figure 4 shows the international development approach. Different stages were classified under the name of "chain of establishment," which is made up of the following four stages: 1. No regular export activities: A company does not commit foreign resources while there is no channel of regular information between the company and the given markets. 2. Exportation through representatives or independent agents: A company has a regular channel for getting information of the foreign markets, and the commitment of resources is greater than in the previous stage. 3. Establishment of sales subsidiary: This involves having a controlled channel of information to allow the company to get its own experience from its foreign activity. The commitment increases as the decisions take on an irreversible character and 4. Establishment of productive units in the foreign country: The international commitment reaches its highest point, and with it, the possibility of acquiring experience from the activities in the corresponding nation.

Based on the empirical study described, two years later a dynamic model of the process of company internationalization was developed, focusing on the development of the company and particularly on the acquisition, integration and use of knowledge of foreign markets and gradual operations, and on the successive increment of the commitment with the foreign market (Johanson and Vahlne, 1977). In summary, we should emphasize the dynamic character of the model developed by Johanson and Vahlne (1977) where internationalization is not associated exclusively with the possession of specific advantages at a certain moment of time, but takes into consideration its evolution over time (Alonso, 1994). Therefore it is a model which responds to *"how"* companies carry out the process of internationalization.

Under this gradualist approach, the process of internationalization is established as a sequence of permanent interactions between the development of knowledge of markets and foreign operations on one hand, and a growing commitment of resources, through a dynamic model which expresses that the result of a decision will constitute the *input* of the next. The two pillars on which the dynamic model of foreign

development are supported are the knowledge of the markets interacting with the level of commitment of resources and capabilities of companies. Both aspects equally reflect the aforementioned under the "intangible assets" resource-based view.

Figure 4: Chain of Establishment



This figure shows the chain of establishment defined by Johanson y Vahlne, in 1975 who identified four stages in the internationalization process. Source: Adapted from Johanson and Wiedersheim-Paul (1975)

As we have discussed, a company's possession of certain intangible assets is one factor, which along with macroeconomic aspects, conditions its mechanism of entry into foreign markets. The increase of these intangible factors means a significant advance in the study of internationalization of companies. Because of this, the resource-based view (Barney, 1991; Mahoney and Pandian, 1992) studied the development and implementation of this corporate strategy.

From the Uppsala Model to the Network Model: Natural Evolution? No gradualist Approaches

At the end of the eighties, coinciding with the process of economic globalization, researchers began to question the internationalization process model developed by the Uppsala School. The main basis that was the appearance of a new type of organizations called "born global" (Knight and Cavusgil, 1996) or "global start-up" (Oviatt and McDougall, 1994). They begin their process of internationalization right from the moment of creation, thus avoiding the chain establishment defined by Johanson and Vahlne in 1975. This lead the way to other types of theories including the *International New Venture Theory* or the *International Entrepreneurship Theory* (Oviatt and McDougall, 1994; Bell, 1995; Madsen and Servais, 1997; and Coviello and Munro, 1997).

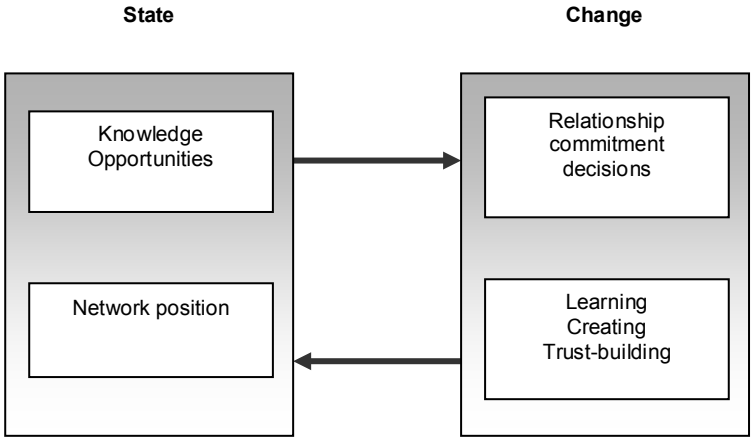
The appearance of these new international companies challenges one of the basic suppositions on which the gradualist approach is sustained. When these companies begin their international activity, they are companies that have been created recently and lack this concept of experience, and therefore we cannot consider knowledge gained from experience as a main determining variable of the international success of the companies (Oviatt and McDougall, 1994). However, in line with Huber (1991) and Forsgren (2001), we cannot restrict the concept of learning as is obtained necessarily through experience, but instead there are other complementary ways of obtaining knowledge. These other ways of obtaining knowledge explain the speed of the internationalization process and even the exclusion of some stages defined in the Uppsala gradual model.

The concept of "network" appears in the latter eighties through the research of Johanson and Mattson (1988). Network is defined as the set of interconnected business relationships, in which each exchange relationship is between companies conceptualized as collective actors (Anderson *et al.*, 1994). These authors used the theory of social networks to explain the internationalization of companies, stating that as companies become internationalized, the number of actors with which they must interact through network

increments and relationships become closer. In this perspective of business networks, entry problems are not associated with the market-country, but with clients or specific supplier companies. All the relevant business information is channelled through the network relationships, with each relationship being unique, due to the characteristics of the participants in the relationship and the history of the relationship.

Under this approach, internationalization must be understood not only in the company's own area but also in its near environment. Based on the model developed by Johanson and Vahlne, the authors themselves make this relationship explicit in their later research (Johanson and Vahlne, 1990, 2003, 2006) professing a strong influence from the industrial network approach. Thus, the internationalization trajectory of companies does not only become the result of the companies' own effort, but also reflects the relationship with other companies around it. Under this approach, a company will direct its operations to foreign markets based on relationships with partners or commit itself to developing the business through internationalization. In this way the probability of finding interesting business opportunities increases and the desire for internationalization increments.

Figure 5: Network Model of Process of Internationalization



This figure shows the network model of process of internationalization defined by Johanson y Vahlne, in 2009. The main structure of the model is y the distinction between static aspects and dynamic aspects of the variables of internationalization. On the left we can see the variables defined as static aspects and on the right we can see the dynamic variables. Source: Johanson and Vahlne (2009)

Therefore, in order to continue operating strategically and detect new potential opportunities, a company will need to encourage new relationships and increase the effectiveness of the current operations in the "host" market to build this degree of intangible commitment with the market. Each deliberate effort assures this continuous presence, but also increases the degree of presence in a given market. This aspect of the internationalization process is separate from the more tangible resources and the institutional commitment demonstrated in the modal form (Malhotra and Hinings, 2010).

The literature underlines the modal form as a tangible indicator of different levels of resource commitments and degrees of control of the internationalized company. When a company internationalizes, it faces complex choices among a variety of institutional agreements, such as, sole proprietorships, joint ventures and non-equity agreements, such as licenses and franchises. Each of these forms corresponds to different levels of investment in tangible or intangible assets in the foreign market.

IMPLEMENTATION OF THE GRADUALIST VS. NO GRADUALIST APPROACH: CREATION OF THE UPPSALA VARIABLE

As discussed earlier, one of the two goals of this research is to generate a quantitative and comparable index in order to study to the degree that companies follow the guidelines of export behavior dictated by the gradualist methodology. For this, we have generated an index supported by the previous research of Davidson (1980, 1983) and Clark and Pugh. (2001). Based on Davidson (1980, 1983) a comparison by pairs of zones allows us to establish an order of international priority among the sample considered.

For each pair of zones ($Zone_{i\ and}\ Zone_j$) all the companies that have carried out international operations in these two zones simultaneously are considered, assigning the value 1 if the company directed its activity first to the zone whose index we are calculating ($Zone_i$) and 0 in the opposite case. Next, in the same way, the same zone ($Zone_i$) is compared with the next subject of study zone ($Zone_k$) and so on. In this way, we obtain the number of companies that have entered $Zone_j$ before entering the rest of the zones considered in a dual way. This information is used for comparing the total number of companies that have entered in a parallel way in each one of these pairs of zones. This provides an International Priority Index for that $Zone_j$. This procedure would is carried out for each zone considered so that we obtain an International Priority Index (IPI) for each destination zone. Once the different priority indexes are obtained, we will observe the zone that establishes a greater priority. Thus, if we order the IPI obtained for the different zones, we can establish the order of international priority (sectorial order) in the destination of activities abroad.

Calculation of the Uppsala-Company Variable

Based on the theory of internationalization as an incremental process developed under the Uppsala model established by Johanson and Valhne (1977), it is established that companies develop their international activity in incremental steps. For this reason we analyze each company in an individual way based on the established order.

We take companies that have carried out internationalization operations from our database and have directed their activity to different zones than those considered in this study, and temporarily in an unequal manner in regards to other companies. Once we have established the individual order for each company, this is compared with the order obtained globally for all the companies, and identified as sectorial order, so that it allows us to compare the evolution of the different international stages of each company with the sectorial order thereby providing the Company International Priority Index. The IPI is given by the following formula:

$$IPI_{company.i} = \sum_{z=1}^{z=n} \left[\left(1 - \frac{\text{Company Order}_{i,z} - \text{Sectorial Order}_z}{n-1} \right) * \text{IPI}_z \right] \quad (1)$$

Where:
Z = zones where international operations are carried out
i = 1,2, …..n

CONCLUSION

The goal of this research has been to create a holistic and global model, integrating the main theories and approaches of company internationalization. In view of the export strategy, the resource and capacity approach has shown the greatest ability to explain the factors associated with internationalization. In turn, the gradualist model of the Scandinavian school of thought has been widely utilized as a satisfactory explanation of the appropriate methods and momentum for gradual export abroad.

As result of the second goal of the research, we demonstrate implementation of the gradualist models. The manner of entering each of the different international markets on the part of the companies, though being an easily understood intuitive concept, nevertheless generates, confusion from the operating point of view. There is no quantitative variable that can identify if a specific company, or sector, adheres to the guidelines of the gradualist model. For this purpose, we have created an easily measured quantitative, continuous variable, which indicates the extent that companies are adapting the thesis proposed by the Scandinavian school of thought.

The methodology used allows us to obtain a quantitative basis of the gradualist versus non-gradualist methodology. The measure indicates the distance a company IPI is from the sectorial IPI. Those with higher difference have not developed a pattern of foreign entry based on the principles of the Gradualist School. Empirical research is needed to verify the accuracy of predictions made by the model developed here.

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TRUE GREEN CONSUMERS: AN INVESTIGATION OF CONSUMERS' GENUINE WILLINGNESS TO SHARE ENVIRONMENTAL RESPONSIBILITY

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ABSTRACT

This research investigates environmental attitudes among consumers in three countries: The United States of America, Kuwait and Turkey. The choice of the three countries is based on levels of income and economic development. The focus of this study is exploring characteristics of consumers having the goal of becoming genuinely green. A true green consumer is an individual who plans their lifestyle to become environmental friendly. Moreover, true green consumers are not only environmentally responsible, but also committed to convert his family and friends into green individuals.

JEL: M16, M30, M31, Q50, Z10

KEYWORDS: Green Consumers, Consciousness, Skepticism, Locus of control

INTRODUCTION

The environment preservation and pollution reduction movements started in the 1960's, and have pressured governments and political systems to take actions towards saving the ecological system (Straughan and Roberts, 1999; Alsamdi, 2007). Global concern regarding environmental deterioration has translated into a commitment of businesses to change their processes in an attempt to protect the environment (Farj and Martinez, 2007). Pressure on businesses started in the 1980's when academic research identified increasing environmental threats (Straughan and Roberts, 1999). Throughout the years, companies moved from reducing pollution to changing their product design and communication methods to keep up with the environmental movement.

Serious deterioration of the environment became obvious in the 1990's (Alsamdi, 2007) when environmental movements gained importance (Paco et al. 2009). The usual dilemma is to identify a balance between preserving the environment and sustaining economic growth. Consumers in the United States and Western Europe are more aware of ecological problems and are more willing to become responsible and careful with regard to consumption methods (Stone et al. 1995).

The ecological consumption concept has been discussed in the literature (Granzin and Olson 1991, Guagnano et al., 1995, Stone et al., 1995, Sanchez et al., 1998). These concepts include consumer commitments, responsibility, attitude towards recycling and a willingness to pay more for green products (Farj and Martinez, 2007). An important change in the social system is the emergence of ecological consumers (Farj and Martinez, 2007).

Environmental issues are important topics in marketing research due to their importance to consumers and organizations. The uniqueness of this research stems from the focus on three countries with different cultural, political and economic backgrounds. The objective is to identify the profile of true green consumers based on external factors. This paper begins with a description of the environmental situation in each country. Next, the literature review is discussed. The paper continues with a discussion the methodology and presentation of results. The paper closes with some concluding comments.

GENERAL INFORMATION ABOUT THE CHOSEN COUNTRIES

Environmental movements in the United States are stronger than in Turkey and Kuwait. Environmental concerns are regularly addressed by the American government. There is continuous growth in the number of companies obtaining certifications for green buildings (Miller and Washington, 2009). Moreover, the use of solar and other forms of natural energy is in the planning stages for several large companies such as Kohl's, Macy's, Target and Wal-mart (Miller and Washington, 2009). The use of plastic bags was reduced or eliminated in several retailing shops such as Whole Foods (Miller and Washington, 2009). These efforts made by companies are increasing consumers' access to green products and green lifestyle. Discussing the growth of the green retailing in the United States is not the main concern of the current research. A general picture of the situation is discussed for comparing the three countries investigated.

Business research in USA started to show interest in environmental studies in the 1960's and tried to link it to politics (Roberts, 1996). According to Roberts (1996), green consumption in the United States had trends in the 1990's including: 1) green products became mass market commodities, 2) consumers show preference and support for green companies, and 3) increases in green product categories. The literature shows that consumers in America are willing to pay higher prices for green products because of their belief that it will improve their future quality of life (Rao and Bergan, 1992; Lambert, 1996; Vlosky et al., 1999). It is difficult to find environmental research on Kuwait especially in the field of green business. The lack of interest and low priority for environmental issues are primary reasons behind the lack of data. Most available environmental research on Kuwait relates to the oil industry and post 1991war situation. This lack of research is common in developing countries (Latvin, 1998).

After the Iraqi invasion of Kuwait, the environmental status of the country changed dramatically due to damaged marine life and polluted air. During the liberation war, Desert Storm, the Iraqi regime decided to abuse the environment as means of revenge (Khordagui, 1991). The Iraqi regime damaged the environment in Kuwait by: a) Spilling almost 12.5 million barrels of crude oil in the water and polluting marine life, b) Polluting the air by lighting almost 600 oil-well heads, and c) Destroying land and agriculture through tank continuous movements (Khordagui, 1991).In 2001, a sad marine life environmental incident occurred in Kuwait. Thousands of dead fish washed up on the coast of Kuwait in August 2001(GLEG, www.greenline.com.kw). This incident encouraged a group of young Kuwaiti activists to start the first independent green group in the GCC region. The Green Line Environmental Group is still an active source of information for individuals who are seeking information and tools for becoming green citizens (UNEP.org).

Turkey has established some base of business research in the field of green marketing. Research in Turkey has shown that individuals are usually concerned with their daily challenges and have little interest in preserving the environment (Muzaffar and Emine, 2005). Muzaffar and Emine (2005) suggested remedies for the current situation in Turkey. Those remedies include: 1) educating consumers about the result of their consumption habits on the long run, 2) rewarding concerned consumers as type of encouragement, 3) more media focus on concerned consumers, and 4) collaboration among media, government and private sector for spreading the awareness (Muzaffar and Emine, 2005).

The environment was mentioned for the first time in the Turkish constitution in 1961 (Ozdemir, 2003). Concerns regarding ecological problems grew rapidly in the 1980's especially in the industrial areas of Turkey (Ozdemir, 2003). More explanations were added to the Turkish constitution in 1982, which led to the use of natural gas, thereby reducing pollution in rural areas (Ozdemir, 2003). Moreover, Turkey started to change its education system to include environmental studies at the university level with the growth of environmental engineering (Ozdemir, 2003). This happened because of Turkey's continuous attempts to join global organizations and the European Union (Ozdemir, 2003).

The Environmental Vulnerability Index (EVI) is used by the United Nations Environment Development Program (UNEP). This index combined with social and economic indices helps prepare countries for sustainable development. EVI Country Profiles show Kuwait and Turkey are highly vulnerable countries with EVI's of 323 and 353 respectively. Apparently Turkey is close to becoming an extremely vulnerable country unless they take major actions to reduce current and expected damage to their ecological system. The United Sates, on the other hand, is considered vulnerable with an EVI of 300.

Another environmental classification is the Environmental Sustainability Index (ESI). It was an initiative based on collaboration between Yale Center for Environmental Law and Policy (YCELP), the Center for International Earth Science Information Network (CIESIN) of Columbia University, the World Economic Forum and the Joint Research Centre of the European Commission. The initiative started in 2001 at the World Economic Forum in Davos, Switzerland. At the forum, the ESI was defined as "the ability to produce high levels of performance on each of the dimensions in a lasting matter" (World Economic Forum Report, 2001). In 2010, 163 countries were ranked based on 25 performance indicators. The United States of America was ranked 61st with an EPI of 63.5. Turkey was ranked 77 with an EPI of 60.4. Kuwait, on the other hand, was ranked 113 with a low EPI of 51.2.

LITERATURE REVIEW

Farj-Andres and Martinez-Salinas (2007) defined a green consumer as an ecological consumer who is "an individual interested and concerned for the environment and shows an important verbal and real ecological commitment." Alsamdi (2007) defined green consumers as "environmentally conscious consumers who are loyal to green products." Another definition of green consumers is "consumers whose purchases are influenced by environmental issues" Shrum et al. (1995). A seminal research categorizing green consumers was by Chitra (2007). The author presented four categories of consumers: "1) Aspirants who wish to purchase green products at reasonable price, 2) Addicts are addicted to buying green products, 3) Adjusters look for satisfying products (green or not green), and 4) Avoiders, do not believe in green consumption or green marketing" (Chitra, 2007).

Montgomery and Stone (2009) presented a cultural comparison concerning environmental attitude in five countries: Azerbaijan, Spain, Italy, USA and Venezuela. The dimensions used to measure environmental responsibility were awareness of environmental issues, available knowledge, skills, and a true desire to become active (Montgomery and Stone, 2009). The genuine desire of consumers to convert into effective green consumption was introduced by Fransson and Garling (1999). Fransson and Garling based their work on the scale of ecological attitude introduced by Maloney et al. (1975) in which they relied on four variables: verbal commitment, actual commitment, affect or emotional commitment, and knowledge (Fransson and Garling, 1999). In the current research, a true green consumer is a leader and an influential voice in their community. The role of reference groups and opinion leaders are importance in affecting the purchasing decisions for green products (Welsh and Kuhling 2009).

Alsamdi (2007) defined environmental consciousness as "showing a strong sense of environmental responsibility." Among the activities that show consumers'' consciousness are recycling, buying environmental friendly products and reducing the use of energy (Miller and Washington, 2009). Another investigation of consumers' consciousness was introduced by Schlegelmilch et al. (1996). The authors discussed consciousness through four dimensions: perception of knowledge, recycling, attitude and political actions (Bohlen et al., 1993; Schlegelmilch et al., 1996). Hence, our first hypothesis is:

H1: Environmental consciousness will have a relationship with the creation of True green consumers.

The media can play an informative role in educating consumers about ecological problems. Advertising could pay more attention to changing the misconception of green lifestyle by showing it as a convenient

and affordable (Laroche et al., 2001). Another aspect that could be advertised is the positive environment changes resulting from simple changes in consumers' consumption behavior (Laroche et al., 2001).

The environment is shared by nations around the world therefore; the enforcement of international law is essential for solving ecological problems facing our planet (Esty, 2008). Each country needs a special regulatory system that starts at the city level to preserve the environment based on the compliance with a global governance system (Esty, 2008). Esty (2008) discussed the role of United Nations Environment Program (UNEP) and its diminishing effect on nations due to a high level of bureaucracy and the lack of performance indicators for countries to follow. Moreover, the location of UNEP (Nairobi, Kenya) represents a problem when it comes to job demand (Esty, 2008).

With increased ecological knowledge among consumers, companies started to produce green products (Pride and Ferrell, 2008). Alsamdi (2007) defined green marketing as "marketing activities within a framework of environmental responsibility." He also defined green products as "products that do not harm the environment" (Alsamdi, 2007). Companies are increasingly communicating their environmental activities in an attempt to strengthen their reputation and image to the public (Davis, 1994). Moreover, companies advertise their collaboration with NPO's and charity organizations to support their good image (Davis, 1994). Environmental activities advertised include: protection of wildlife, green business processes and preserving natural resources (Davis, 1994). Moreover, companies are changing targeting strategies to include consumers' level of commitment to preserving the environment (Schlegelmilch et al., 1996). Investigating green consumption habits is an important aspects of segmenting consumers by environmentally active companies (Schlegelmilch et al., 1996). Hence we hypothesize:

H2: External factors have a relationship with the creation of true green consumers.

Kolmuss and Agyeman (2002) explained some cognitive and emotional barriers that might have a direct effect on consumes' green behavior. The barriers include: 1) slow deterioration of environment, 2) the complexity of environmental problems, 3) the non-immediacy nature of environmental problems, and 4) lack of awareness resulting in a lack of emotional involvement (Kolmuss and Agyeman, 2002). Another aspect of consumer skepticism is confusion associated with mixed advertisement messages and companies' false claims (Shrum et al., 1995). Moreover, the perceived high cost of green products, level of bureaucracy, lack of environmental regulations, strict regulations and price/convenience dilemma, could affect consumer skepticism concerning green consumption (Magrath, 1992; Ottman, 1994; Roberts, 1996). Skepticism could be another reason for the gap discussed in previous research between intentions to become green and the actual green behavior (Roberts, 1996). Hence, we specify our next hypotheses:

H1a: Consumer skepticism weakens the relationship between consciousness and the creation of true green consumers

H2a: Consumer skepticism weakens the relationship between the influence of external factors and the creation of true green consumers

Montgomery and Stone (2009) explained the concept of locus of control as control over external environment. When a person does not control external factors, they will not believe in the effectiveness of their actions in preserving the environment. This lack of control could cause some level of frustration for individuals; they become skeptical and unwilling to help. The authors called this the locus of control. This occurs when the individual has the skills to make others aware of current environmental issues. Hence, our next hypothesis is:

H1b: Locus of control affects the relationship between consciousness and the creation of true green consumers

H2b: Locus of control affects the relationship between external factors and the creation of true green consumers

Religion might be a source of guidance for environmental protection. Eckberg and Blocker (1989) found mixed results concerning christian beliefs concerning the environment. The Bible and the Quran provide guidance for environmental ethics (Ozdemir, 2003). Hence, we hypothesize

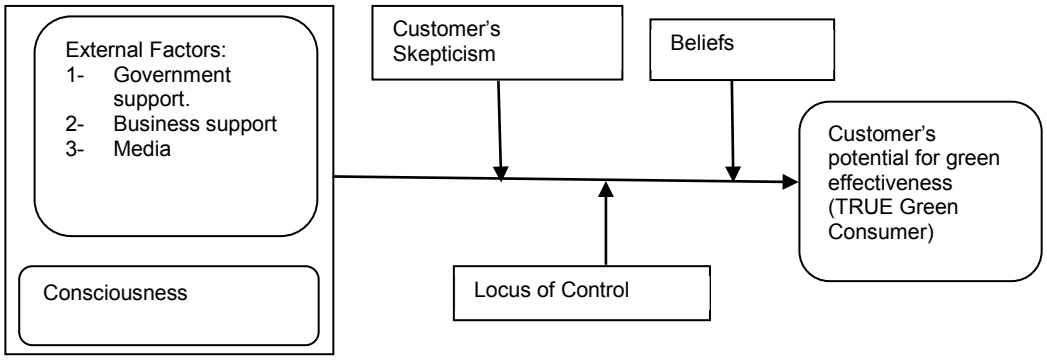
H1c: Spiritual Beliefs affect the relationship between consciousness and the creation of true green consumers

H1c: Spiritual Beliefs affect the relationship between external factors and the creation of true green consumers

DATA AND METHODOLOGY

Figure 1 outlines the research model utilized in this research. As depicted here the independent variables are antecedents that are important for turning consumers true green. The dependent variables represent what this research defines as true green consumer. That is a consumer who not only changes their own behavior to become more committed toward environmental protection, but also is committed to influencing their family, peers, and society.

Figure1: Research Model



This figure shows the general model used in this research. External factors and consciousness are the independent variables and the potential for truly green consumer is the dependent variable. Consumer skepticism, beliefs and locus of control are the moderators.

The survey was distributed to students in three countries. Translation was not needed because the selected universities are English-teaching. Some interviews were conducted with individuals and business experts in the field of marketing to prepare for the research. The survey method was chosen for three reasons: 1) simplicity, 2) time constraints and 3) a high level of generalizability (McGrath, 1982; Ary et al., 1996). The subjects are undergraduate and graduate students finishing their degrees in Kuwait University, University of Texas at Arlington, and Bilkent University in Ankara.

Based on Cook and Campbell (1976) several issues could affect the internal validity of the study. Most of these issues were controlled for by utilizing random selection. External validity applies in this study since the results could be applicable to different settings, times and groups of people (Cook and Campbell, 1976). The main threat to constructs' validity in this study is the problem of confounding constructs and the level of constructs (Campbell and Stanley, 1963). Thorough definition of constructs and the use of multiple scale items were adopted in order to control for threats to construct validity.

Some questions used in the survey were based on previously developed scales in the literature. Some questions were added for a better fit with the current research. Moreover, most questions were altered to obtain better fit and simplicity. The following are resources for the scales: 1) Consciousness (Roberts 1996 & 1999), 2) Skepticism (Weigel & Weigel, 1978 and Brwon and Wahlers, 1998), 3) Consumer effectiveness (Stone et al., 1995), 4) Government Role (Weigel & Weigel, 1978 and Brwon and Wahlers, 1998), 5) Beliefs and 6) Locus of control (Montgomery and Stone 2009). Researchers distributed an information sheet to the subjects indicating that participation was voluntary and there was no reward associated with participation. The contact information of the principle researcher was listed on the information sheet. All subjects were aware they would not be asked to provide any personal information.

Three hundred surveys were distributed in the College of Business at Kuwait University. The research assistant received 260 filled surveys including 251 with complete data. The total number of distributed surveys at The University of Texas at Arlington was 400 resulting in 258 useable surveys. Dr. Ahmet Ekici helped with the data collection process in Turkey. More than 300 surveys were distributed and 306 were returned resulting in 282 completed surveys for use in the study.

RESULTS

Table 1 shows that USA respondents believe their country's environmental friendliness is good relative to Turkey and Kuwait. Table 2 shows that USA respondents believe in the economic success of their country. The majority of respondents in Kuwait do not believe in the economic success of their country.

Table 1: Perception of the Country's Environmental Friendliness

Response	Kuwait		Turkey		USA	
	Freq.	%	Freq.	%	Freq.	%
YES	68	27.1	25	8.9	107	41.5
NO	183	72.9	257	91.1	151	58.5

This table shows responses to the question concerning perception about the country's environmental friendliness, 27.1% of Kuwaitis said yes, 8.9% of Turks said yes and 41.5% of Americans said yes.

Table 2: Perception of the Country's Economic Success

Response	Kuwait		Turkey		USA	
	Freq.	%	Freq.	%	Freq.	%
YES	84	33.5	38	13.5	208	80.6
NO	167	66.5	224	88.5	50	19.4

This table shows responses to the question about perception about the country's economic success, 33.5% of Kuwaitis said yes, 13.5% Of Turks said yes and 80.6% of Americans said yes.

Exploratory factor analyses were used on the data from each country. The varimax rotation method was used to provide a better description of the extracted factors. A few items were deleted from all three datasets due to multiple loadings. To assess the reliability condition and reduction of random error, Cronbach coefficient alpha equal to or greater than 0.6 (Crano et al., 1973; Nunnally, 1978).

Table 3 shows the reliability of each factor used in the model for each country. The results show internal consistency of constructs used are high enough to prove the unidimensionality of the scales used. Moreover, the total variance explained for most of the constructs is high enough to show the variation occurring in the model. Table 4 presents descriptive statics of the model. The standard deviation shows the data points are close to the mean. The mean values show that most respondents agreed with statements included in the survey.

Tables 5, 6 and 7 represent the general results for the hypotheses in the three countries. Based on Table5, the coefficient of determination R2 values and the model fit (F-test) are support Hypotheses H1, H1c, H2,

and H2c tested in Kuwait. Table 6 presents the results for Turkey. These results show that hypotheses H1, H1c, H2, H2a and H2c were supported. Finally, Table 7 shows the USA results indicating support for Hypotheses H1, H1b, H1c, H2, H2b and H2c.

Table 3: Scale Reliability

Scale	Kuwait		Turkey		USA	
	Total Var. Explained	Alpha	Total Var. Explained	Alpha	Total Var. Explained	Alpha
Consciousness	17.97%	0.751	19.40%	0.848	20.70%	0.865
External	31.17%	0.905	29.30%	0.903	39.90%	0.943
Skepticism	41.34%	0.903	38.54%	0.753	50.70%	0.929
TrueGreen	50.33%	0.873	47.40%	0.896	59.80%	0.907
Locus Control	58.50%	0.906	55.20%	0.699	68.12%	0.920
Belief	65.70%	0.885	62.50%	0.961	76.44%	0.803

Extraction Method used is Principal Component Analysis with eigenvalues higher than 1.00. All of the obtained Cronbach alpha values are higher than 60%.

Table 4: Descriptive Statistics

Kuwait			Turkey			USA		
Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N
4.71	1.15	251	4.90	1.20	282	4.22	1.40	258
6.17	0.80	251	6.02	0.92	282	5.68	1.01	258
3.76	1.36	251	5.32	0.66	282	4.04	1.29	258
3.93	1.28	251	4.04	1.36	282	3.62	1.51	258
4.97	1.47	251	5.6	0.805	282	5.27	1.17	258
5.52	1.05	251	3.8	1.89	282	3.67	1.43	258

This table shows descriptive statistics of the sample. N is the sample size for each country. The 7-point likert scale used in this study indicates that values from 1 to 3 represent the disagreement among respondents. Values from 5 to 7 represent the agreement among respondents.

Table 5: General Results for Kuwait

H	KUWAIT				
	R2	Adj. R2	Beta	ANOVA	
				F	Sig.**
H1	.292	.289	.541	102.8	.000***
H1a	.292	.287	.001	51.19	.984
H1b	.302	.296	.136	53.62	.065*
H1c	.341	.336	.400	64.27	.000***
H2	.067	.064	.260	17.98	.000***
H2a	.068	.060	-.0.09	9.005	.766
H2b	.074	.067	.198	9.965	.172
H2c	.130	.123	.393	18.55	.000***

*This table shows results of tests on Kuwait. ** = P < .05. Significant difference exists between consciousness and the creation of true green consumers. Consumers' skepticism and locus of control do not have any effect on the relationship between consciousness and the creation of true consumers. There is a marginal significant difference between consciousness and the creation of true green consumers when using beliefs as a moderator. Significant difference exists between external factors and the creation of true green consumers. This significant difference increases when introducing beliefs as a moderator. There is no significant difference between external factors and the creation of true green consumers when using consumers' skepticism and locus of control as moderators.*

The combined results show consciousness has a relationship with the creation of true green consumers (H1) in each of the three countries. On the other hand, external factors have a clear effect on creating true green consumers, only in the United States (H2). Skepticism has a negative influence on that relationship (H1a, H2b). Spiritual beliefs have a moderating effect on the relationship between external factors and the creation of true green consumers in Kuwait and Turkey (H2c).

Table 6: General Results for Turkey

H	TURKEY				
	R2	Adj. R2	Beta	ANOVA F	Sig**
H1	.23	.227	.437	83.46	.000
H1a	.24	.235	.248	44.08	.052
H1b	.236	.231	.168	43.19	.116
H1c	.26	.255	.220	49.1	.001
H2	.034	.031	.185	9.87	.002
H2a	.064	.057	.288	9.465	.003
H2b	.04	.035	.145	6.06	.138
H2c	.102	.095	.283	15.78	.000

*This table shows results of tests on Turkey. ** = P < .05. Significant difference exists between consciousness and creation of true green consumers. Consumer skepticism and locus of control do not have any effect on the relationship between consciousness and the creation of true consumers. There is a marginal significant difference between consciousness and the creation of true green consumers when using beliefs as a moderator. Significant difference exists between external factors and the creation of true green consumers. There is a marginal significant difference when using consumer skepticism as a moderator. There is a significant difference when introducing beliefs as a moderator. There is no significant difference between external factors and the creation of true green consumers when using locus of control as moderators.*

Table 7: General Results for USA

H	USA				
	R2	Adj. R2	Beta	ANOVA F	Sig **
H1	.34	.334	.580	129.9	.000
H1a	.35	.343	.157	68.08	.036
H1b	.373	.37	.375	75.82	.000
H1c	.38	.37	.291	77.7	.000
H2	.303	.30	.550	111.23	.000
H2a	.317	.312	.139	59.19	.022
H2b	.336	.33	.269	64.4	.000
H2c	.35	.34	.272	68.32	.000

*This table shows results of tests on Turkey. ** = P < .05. Significant difference exists between consciousness and the creation of true green consumers. Consumers' skepticism does not have any effect on the relationship between consciousness and the creation of true consumers. There is a marginal significant difference between consciousness and the creation of true green consumers when using locus of control and beliefs as a moderators. Significant difference exists between external factors and the creation of true green consumers. There is a marginal significant difference when introducing locus of control and beliefs as a moderators. There is no significant difference between external factors and the creation of true green consumers when using consumers' skepticism and locus of control as moderators.*

CONCLUSION

This research examines the combination of factors that could create a true green consumers. The research started by presenting current environmental conditions and challenges facing the three countries investigated. The investigation of external factors, including the role of government, businesses and media, showed a positive effect on the creation of true green consumers in the three countries. Consciousness also showed a positive effect on the creation of true green consumers. Religious beliefs are the major factor strengthening the relationship between the two independent variables and the potential for the creation of true green consumers. The results suggest Kuwait and Turkey are in serious need for environmental education for the populations to understand the dangers of their consumption patterns. Understanding of the government role and locus of control could have shown results that are more significant if consumers were aware of the environmental laws and the citizen actions that are available in Turkey and Kuwait.

The main challenge facing this type of research is the difficulty of collecting sufficient data from three different cultures. Control over the sampling process and the survey distribution was another challenge especially, in Turkey. Other limitations are common when using a survey as the main instrument of data collection. These limitations include the level of honesty in the answers provided. The period of completing this project represented another limitation. Such research requires additional longitudinal type of research in order to capture the change in consumers' perspective over the years.

The logical next step for this line of research is to focus on the business point of view. The concept of business sustainability and social responsibility should be investigated based on the results of the current research. Another potential research direction is the focus on specific product and service categories and their hunt for true green consumers. It would be interesting to learn if consumers are true green only regarding specific product categories.

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HEDGING, HEDGE ACCOUNTING AND SPECULATION: EVIDENCE FROM CANADIAN OIL AND GAS COMPANIES

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ABSTRACT

Using archival data, this paper presents the results of analyzing a sample of twelve primarily oil and gas, western Canadian energy firms and their use of financial derivatives to manage commodity price risk. The firms range in size from small to large based on total assets. All twelve companies document and disclose their risk strategies and derivative products they use to manage risk. Regardless of size, all companies make use of common commodity price risk strategies using derivatives. The large energy companies are more likely to utilize hedge accounting than are their small and mid-sized peers. All companies, except for the largest ones, claim they do not use derivatives to speculate. However, by clarifying the definition of speculation, all of the energy firms attempt derivative speculation to a different extent.

JEL: G32; M41

KEYWORDS: Hedging, hedge accounting, speculation

INTRODUCTION

Based on data taken from the Canadian Association of Petroleum Producers' website, Canada ranks as the world's third largest producer of natural gas and seventh largest producer of crude oil (CAPP, 2011). In 2007 and 2008, being the fifth largest energy producer in the world, the energy industry in Canada invested CDN $50 billion into the Canadian economy, making it the largest private sector investor in Canada (CAPP, 2011). Comprising 25% of the market value of the Toronto Stock Exchange, the energy industry in Canada, directly and indirectly, employs nearly half a million people (CAPP, 2011). Geographically, the largest producing area of crude oil in Canada is the western provinces followed by the Northwest Territories and Atlantic Canada (CAPP, 2011). In 2006, oil production from the tar sands area of northeastern Alberta surpassed conventional oil production, and though mature field production is declining, Canada's oil reserves are estimated to be the second largest in the world, exceeding 175 billion barrels (/bbls) (CAPP, 2010). The objectives of this paper are to determine whether Canadian, publicly-held, energy companies (primarily oil and gas, and pipelines) i) have documented risk management strategies for dealing with financial risks, ii) make use of derivatives to help manage their financial risks, iii) make use of common strategies with derivatives in managing their risks, iv) practice hedge accounting in conjunction with their risk management strategies, and v) speculate, as a result of the manner in which they use derivatives.These questions are of interest for a number of reasons.

(Whaley, 2006) points out that most of the major problems that have arisen as a result of derivatives have been caused by inadequate oversight and lack of knowledge by management. Although derivatives have been in existence for thousands of years (Whaley refers to asset-or-nothing put options used by grain farmers around 1750 BCE, for example), their use has come under increasing scrutiny in the last several years. For example, see the misuse of derivatives leading up to the demise of Barings Bank (Stein, 2002), or the Metallgesellschaft AG controversy (Krapels, 2001). Questions remain as to whether the benefits of risk management at the entity level are realized when there is variation between financial theory and how it is put into practice (Servaes & Tamayo, 2009). It is important that management address these risk

management issues in their annual financial statements and annual reports. Omitting discussion around the topic of financial risk management, for example, would suggest management is not aware of the issues, considers them immaterial, or does not understand them sufficiently to address them.

Examining the financial risk management strategies employed by companies in the Canadian energy industry will also show whether energy producers are consistent in the strategies used to manage commodity and other risks. The use of hedge accounting is of interest since Canadian public companies are in the midst of transitioning from the use of Canadian Generally Accepted Accounting Principles (Canadian GAAP) to International Financial Reporting Standards (IFRS) in preparing and disclosing their interim and annual financial statements. Canadian public companies with reporting year-ends ending after December 31, 2010 will be required to use IFRS. Although the current Canadian rules for accounting for derivatives and hedge accounting are similar to the current IFRS rules, the International Accounting Standards Board (IASB) has released an exposure draft dealing with hedge accounting, with comments to be received by March 9, 2011 (IASB, 2010). If this exposure draft is published in final form in 2011, it is expected to make hedge accounting a more realistic option for companies reporting under IFRS. The intent of the exposure draft is to better align the objectives and requirements of hedge accounting with the economics of hedging. Finally, it is of interest to know whether the companies examined here, and that use derivatives, only do so to hedge risk or do they also use derivatives to speculate.

Finally, in the analysis of the impact of derivative accounting on risk management, the use of archival data does not lend itself to the determination of whether companies use derivatives to speculate rather than to hedge (Lins, Servaes, & Tamayo, 2008). However, there is sufficient information provided in the annual financial statements of the companies examined in the current study to conclude on whether they are hedging or speculating.The paper develops as follows. It first offers a literature review focused on hedging followed by the method and data used in the research. The paper then presents results of the observations upon the data and conclusions based on the observations. The paper concludes with reference to the future direction of research based on a larger data sample.

LITERATURE REVIEW

As defined by Whaley (2006) speculation is "a trading position established to profit from a directional move in the price of an asset" (p. 887). It is worthwhile examining whether companies speculate since assertions by management in annual reports and financial statements typically state that management does not enter into contracts for trading or speculative purposes. Much of the current literature dealing with hedging, hedge accounting, risk management and speculating is empirical in nature (Lins et al., 2008; Servaes & Tamayo, 2009) and consists of surveys of companies and their management practices vis-à-vis financial risk. Others have looked at the impact of hedge accounting on corporate risk management (Panaretou, Shackleton, & Taylor, 2009) and others consider the motivations behind why firms create and maintain costly derivative programs when their impact on overall risk at the entity level is minimal (Guay & Kothari, 2003). Lins, Servaes, & Tamayo (2008) surveyed approximately 4,000 firms across 48 countries, which resulted in 354 firms answering at least a portion of their survey. One of the key questions they asked was whether changes to accounting rules regarding derivatives, i.e., the introduction of Statement of Financial Accounting Standards (SFAS) 133 in the U.S., and International Accounting Standard (IAS) 39 internationally, impacted firms' risk mangement activities (Moore, 2002). The most significant impact of the change in accounting principles was the recording of all derivatives at their fair values on the balance sheet (Siegel, 1996), with any changes in those fair values recorded either in the income statement or in Shareholders' Equity via Other Comprehensive Income (OCI) and Accumulated Other Comprehensive Income (AOCI). Prior to these rule changes, derivatives were recorded at historical cost with no changes in value recorded when derivative fair values changed. The new accounting rules embodied in SFAS 133 also required increased financial statement note disclosure around the extent of derivative acivity.

Lins et al (2008) found that 42% of those firms responding to the question of whether changing accounting rules influenced their risk management function indicated the change in standards affected one or more of their risk management activities. From an economic viewpoint, it seemed the major reason for this affect was firms' increasingly compromised ability to hedge. The new accounting rules required firms to increase their documentation surrounding hedging transactions (Welch, 2003), and document, typically on a monthly basis, that the hedges they employed had been effective, and on a go-forward basis, were expected to continue to be effective. If hedges were determined to be effective, then any gain or loss on the hedging item (typically a derivative) could be offset either in net income or shareholders' equity, against the loss or gain on the hedged item (Sandor, 1973). Any portion of designated hedges where the change in fair value or cash flows of the hedging item was less than 80% or more than 125% of the change in fair value or cash flows of the hedged item, was required to be recorded in net income. In addition, any changes in the fair values of derivatives that were not designated as hedges were now to be recorded in net income (Berkman & Bradbury, 1996).

Lins et al (2008) determined that those firms most likely to have their risk management practices impacted by the changes in accounting standards were those listed on stock exchanges, resident in countries with high accounting standards (e.g., U.K., Canada, U.S.), where accounting rule compliance was enforced, and were most interested in managing income statement volatility. These companies, along with those operating in environments where contracts (e.g., management compensation contracts) were based on accounting numbers, were the firms most interested in qualifying for hedge accounting. The authors also found that the reduction in ability to hedge from an economic viewpoint also supported a decline in the use of derivatives for speculative purposes.

In their survey of 234 large corporations, Guay & Kothari (2003) found their median firms to hold derivatives that could hedge only three to six percent of the firm's total interest rate and foreign currency exposures. This led them to question why these firms even bother to create whole risk management departments, since these departments are not costless. Brown (2001), in a case study of the corporate treasury department of a large multinational corporation, found the annual costs to maintain the company's foreign currency hedging program to be U.S. $3.8 million, and the impact on net earnings to be in the area of U.S. $5.0 million. The net savings of U.S. $1.2 million were hardly enough to explain the motivation for continuing the program.

Guay & Kothari (2003) found the costliness of derivative programs to be consistent with firms using them as an additional layer of financial risk management and as part of an overall risk management program that included other ways of managing financial risks such as geographical diversification of operations and long-term purchase and sale contracts. As well, they found firms used derivatives to help manage decentralized decisions based on accounting numbers used for performance evaluation and for speculation. Brown (2001) and Servaes & Tamayo (2009) raise the question of why companies even bother to enter into hedging activities. Providing the example of a jeweler purchasing gold for production, is it not irrelevant for the jeweler to hedge price risk exposure since investors would have access to the same derivative products as the jeweler and be able to manage risk just as easily from their own investment portfolio level. Moosa (2010) argues stereotyped definitions of the terms arbitrage, hedging and speculation have led to confusion as to what the terms really mean. Using a basic futures contract applied to a typical commodity, Moosa demonstrates that both speculators and hedgers act identically upon the same variables. Given that E_tS_{t+1} represents the expected commodity spot price one period into the future at time $t+1$, and F_t^{t+1} represents the price of a one-period futures contract on the same commodity, the expected cost for a firm buying a futures contract for hedging purposes would be $F_t^{t+1} - E_tS_{t+1}$. This also represents the profit expected by a speculator buying the commodity at the spot price and selling a one-period futures contract. Similarly, an oil or gas producer supplying a futures contract has an expected cost of $E_tS_{t+1} - F_t^{t+1}$, which also represents a speculator's expected profit for selling short the commodity at the spot price and buying a futures contract.

Moosa's point is that financial models do not distinguish between speculators and hedgers as they make their decisions based on the same expectations and variables. The stereotype that speculators seek out risk with an expectation of profit, and hedgers avoid every identified risk is not true. The actual act by a hedger of contemplating the options of hedging or not (either full or partial) has him assuming the same risk as a speculator.

DATA AND METHODOLOGY

Table 1 summarizes the companies examined to support this paper. The data came from annual audited financial statements, and management discussion and analysis reports published by 12 publicly held energy (primarily oil and gas and/or pipeline) companies with head offices in Calgary, Alberta. Four of the companies were classified as small in terms of asset size (total assets less than Cdn $1 billion), four companies were classed as mid-size (total assets greater than Cdn $1 billion but less than Cdn $10 billion), and four were classified as large (total assets greater than Cdn $10 billion). The smallest company examined was Crew Energy Inc. (Crew Energy Inc., 2010), with total assets of Cdn $963 million at December 31, 2009. The largest company examined was Suncor Energy Inc. (Suncor Energy Inc., 2010) with total assets approaching Cdn $70 billion as at the same date. All twelve companies examined had December 31, 2009 fiscal year-ends. The financial statements of all twelve companies were prepared in accordance with Canadian GAAP.

Table 1: Sample of Western Canadian Oil and Gas Companies

Firm	Total assets (Cdn or US $mill)	Total revenues (Cdn or US $mill)	Derivative products utilized
Crew Energy Inc.	$963.2	$162.2	Options, collars, natural gas & interest swaps.
Birchcliff Energy Ltd.	$837.1	$135.3	Commodity price risk contracts.
Fairborne Energy Ltd.	$940.4	$223.3	Collars.
Iteration Energy Ltd.	$897.6	$163.8	Costless collars, oil and gas swaps.
Progress Energy Resources Corp.	$2,458.4	$295.4	Crude oil & natural gas swaps, options & collars, US dollar & natural gas fwd contracts.
ARC Energy Trust	$3,914.5	$842.1	Crude oil collars, three way collars, natural gas swap contracts, basis swaps, US dollar forward contracts,
Bonavista Energy Trust	$3,092.1	$628.6	Costless collars, put options, natural gas swaps and electricity swaps.
Pengrowth Energy Trust	$4,693.6	$977.4	Forwards, futures, crude oil and natural gas price swaps.
Penn West Energy Trust	U.S. $13,876	U.S. $2,154	Collars, forwards, interest rate swaps, foreign currency forwards, foreign currency swaps.
Cenovus Energy Inc.	US $20,552	US $648	Crude oil & natural gas futures to sell production, crude fixed price swaps & options.
TransCanada Corporation	$43,841	$8,966	Forwards, futures, commodity swaps, interest swaps, options.
Suncor Energy Inc.	$69,746	$25,480	Revenue hedge swaps, collars, interest rate swaps, hedges of transactions, puts, collars.

This table displays the Canadian Oil and Gas companies examined in this paper. Ranking is from smallest to largest by total assets. The table also lists the typical derivative products used by the companies.

Hedge Accounting

Canadian GAAP requires that companies report derivatives at their fair value at each balance sheet date. Any changes in the fair values of those derivatives are recorded in either Net Income (NI) or (OCI) for the period (CICA Handbook, Part V, Section 3855.76, 2011). This does not create an issue when the accounting rules are consistent with the economics of hedging. For example, a Canadian company may

have a US $1 million receivable due in 60 days from a U.S. company. When the U.S. company makes payment, the economic value of the receivable will likely have changed in terms of Canadian dollars, since the value of the Canadian dollar has changed vis-à-vis the U.S. dollar during that one-month period. For example, if the Canadian dollar has strengthened from Cdn $1.02 /US $1.00 to Cdn $.98/US$ 1.00, this would be reflected in the accounts by decreasing the value of the US $1 million receivable to Cdn $980,000 and recording a $40,000 foreign currency loss on the income statement at time of collection. If the Canadian company chooses to hedge this receivable by entering into a forward contract to sell US $1 million in 60 days for Cdn $1.02 million, the gain on the forward contract would offset any decrease in value of the US dollar receivable over the 60-day period. The Canadian company would record both transactions through the income statement and the forward contract gain would offset the Canadian dollar loss on collection of the receivable. In such a situation, there would be no need to hedge account for this transaction.Assume the same Canadian company enters into an agreement to sell a portion of its natural gas production in twelve months to customers in the U.S. and does not want to face the risk of natural gas prices declining over the coming year. The company could enter into a series of monthly futures contracts to sell a portion or all of its twelve-month production at a US dollar price determined today. The company could also enter into a series of monthly forward contracts to sell the US dollars received from its sales of natural gas, at a Cdn $/US $ exchange rate determined today. This effectively eliminates any uncertainty surrounding the company's twelve-month sales revenue denominated in U.S. dollars, and its sales revenue denominated in Canadian dollars.

Although these hedges make sense from an economic viewpoint, the accounting rules do not mirror the economics in terms of the timing of recognition of gains or losses. At each balance sheet date over the coming year, the company must mark-to-market its derivatives and any resulting change in fair value must go through the income statement. However, the actual sales of the natural gas will be recorded anywhere from one to twelve months hence. As a result, any of the interim gains or losses on the derivatives will be recorded in NI and not be offset by the losses or gains on the actual sales of the natural gas and collection of the receivables.

Under current Canadian GAAP, to remedy this accounting versus economic difference, the company can choose to hedge account (CICA Handbook, Part V, Section 3865.08, 2011). In doing so, the company would designate each of their forward sales contracts, or futures contracts, as hedges of their actual sales. When marking-to-market the contracts any gains or losses on the derivatives are recorded in OCI. When recording actual sales, the related accumulated net gains or losses transferred to NI from Accumulated OCI will net in the natural gas revenue account with revenue from the hedged items. The requirements for hedge accounting are onerous however. Canadian GAAP recognizes two types of hedges: fair value hedges and cash flow hedges. Fair value hedges are those designed to offset changes in the fair value of an underlying asset or liability. Cash flow hedges offset the variability of future cash flows (CICA Handbook, Part V, Section 3865.07, 2011). In our Canadian company examples, the forward contract protecting the value of the US dollar receivable is designated a fair value hedge, the futures contracts protecting the prices of future natural gas sales, cash flow hedges.

Under Canadian GAAP, to qualify for hedge accounting, documentation requirements are extensive. At hedge inception, a company must identify and document: i) the method of accounting for the hedge, ii) company risk management objectives and strategies, iii) the nature of the specific risk exposure, iv) the nature of the hedge, the hedging and hedged items, and the hedge term, and v) the method for assessing hedge effectiveness (CICA Handbook, Part V, Section 3865.08 (a) and (b), 2011).Throughout the term of the hedge and typically on a monthly basis, the company must also document the ongoing effectiveness of the hedge: i) by reliably measuring that the hedge has been effective over the past month, and ii) the hedging relationship is expected to continue to be effective into the future (CICA Handbook, Part V, Section 3865.08 (c), 2011).

Hedge accounting is onerous and costly. A company may enter into numerous hedging transactions. Each transaction, documented separately and measured regularly, must demonstrate past and expected future effectiveness. All hedge documentation requires updating in a timely manner. Hedge ineffectiveness occurs when the variability of the hedging item offsets less than 80% or more than 125% of the variability of the hedged item. Hedge ineffectiveness, recorded in NI (Accounting Standards Board, 2003) adds variability to the income statement.

RESULTS

Each of the twelve companies examined refers in their annual reports and financial statements to their risk management policies and strategies. All companies are consistent in their disclosure surrounding risk management. Crew Energy (Crew Energy Inc., 2010) for example, characterizes it's management of risk by i) highlighting the company's exposure to market, credit and liquidity risks, ii) recognizing that the company's Board of Directors has overall responsibility for creating and overseeing the company's risk management framework, iii) stating that the Board of Directors has implemented risk management policies and actively monitors compliance with these policies, and iv) clarifying that risk management policies are in place to identify and analyze risks facing the company. The risk management policies are to set risk controls and limits, monitor company adherence to policies and monitor market conditions.

The company goes on to explain the nature of the various risks faced by the company and the strategies followed to manage these risks. With regard to credit risk, for example, Crew Energy Inc. describes market risk as a situation where a "customer or counterparty to a financial instrument fails to meet its contractual obligations" (p. 33). Crew Energy Inc. also incorporates into its contracts with joint venture partners, the ability to withhold production in the event that a partner is not paying. All companies examined described the business practices they employ to manage their credit risk. These included policies such as establishing business relationships with only large, creditworthy purchasers and the marketing of their production through many purchasers.

All companies examined made reference to liquidity risk in the notes to their financial statements or in their annual reports. Suncor Energy Inc. (Suncor Energy Inc., 2010) is typical, describing liquidity risk as "the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities" (p. 79). In managing liquidity risk, all companies made reference to their cash management practices and their use of high quality corporate or government short-term money market securities as investments for their excess cash. Reference is also typically made to the management of working capital to ensure there is cash available to meet current obligations, and should the need arise, the company's ability to draw on unused lines of credit.

The 12 companies examined typically employ derivatives in the management of market risk including commodity price risk, foreign currency risk, and interest rate risk. Each of the energy companies examined makes use of derivatives to help manage their financial risks. Regardless of entity size, each company uses a variety of derivative instruments, as deemed necessary, and from time to time, to help manage financial risks resulting from fluctuations in commodity prices, interest rates and foreign exchange rates. The most common types of hedging transactions entered into by energy companies examined were oil and/or natural gas swaps, collars or forward contracts, including futures contracts, and interest rate swaps. An oil or natural gas swap is similar to an interest rate swap. For example, a crude oil producer may wish to reduce the variability of its crude oil selling prices over the next twelve months. The producer can do this by entering into a series of forward contract payments through a swap dealer. The producer pays a notional amount multiplied by a floating price, and receives in return, a series of payments at a fixed price, multiplied by the same notional amount. The floating rate payments made by the producer to the swap dealer should approximate the same amounts paid to the producer by its customers for the actual physical delivery of oil. By netting the swap with the payments received for

physical delivery, the producer should receive the fixed price per barrel negotiated with the swap dealer. By entering the swap, the producer gains control over crude oil sales revenues and eliminates, depending on the notional amount hedged and the hedge's effectiveness, some or all of the company's revenue variability. The hedge may not be entirely effective if the grade of oil in the swap contract does not share the same characteristics of that physically sold by the producer.

An oil or natural gas producer desiring to protect its production from falling prices employs costless collars. For example, a producer wishing to receive no less than US $75.00/bbl for its monthly oil sales, and willing to cap its monthly revenues at US $85.00/bbl over the upcoming year, could purchase a series of out-of-the-money put options with an exercise price, say, of US $75.00/bbl. The company simultaneously sells out-of-the-money call options with an exercise price of, say, US $85.00/bbl with the same maturity dates and quantities as the put options. By so doing, the producer effectively ensures its production revenues will be no less than US $75.00/bbl, or more than US $85.00/bbl. The collar is costless proceeds from selling the call options offset payments for purchasing the put options.

The producer continues to sell its oil to customers at market prices, but if actual crude oil prices fall below US $75.00/bbl, the "gain" on exercise of the put option will offset the "loss" on the actual sales of crude. The "gain" on crude sales in excess of US $85.00/bbl offset the "loss" on the written call options. For any actual sales between the upper and lower bounds, the call and put options will be out-of-the money and not exercised. To fix the amount of revenue received from their oil and/or natural gas production four of the twelve companies examined entered into forward contracts. It is normal for these contracts to extend up to two years into the future. By fixing the future prices today, management gains control and certainty around at least a portion of future revenues. The counterparties to these agreements are typically end users who also gain certainty around a portion of their future costs.

Four of the companies examined make use of interest rate swaps from time to time. Companies use these swaps as cash flow hedges in situations where one party to the contract "swaps" payments with the other contracting party. Typically, a bank acts as the intermediary between the contracting parties. In a market of rising interest rates for example, a company may have issued new debt at floating rates in response to investor demand. Management might be concerned about rising interest rates and the impact on its variable rate debt. A common course of action in this situation would be for management to enter into a swap agreement whereby the company makes fixed interest payments to the counterparty and receives in return floating rate interest payments. A company typically nets these payments. In those instances where the fixed interest payment is larger for a given payment period than the floating rate interest payment, the company holding the floating rate debt makes a payment of the net difference to the intermediary. The intermediary, in turn, passes the net payment to the company holding the fixed rate debt. The company holding the floating rate debt makes its normal interest payment to investors and, if the floating interest rate is higher than the swapped fix rate, will receive from the intermediary the difference between the fixed and floating rates multiplied by the notional amount of the debt. The company nets this receipt with its floating rate interest expense on its income statement, effectively recognizing interest expense at the fixed rate.

With regard to hedge accounting, nine of the twelve companies examined do not employ hedge accounting, while three of the largest four corporations do hedge account. Suncor (2010), for example, does not use hedge accounting for derivatives related to commodity price risk (options and swaps) and any fair value changes to these derivatives are "immediately recognized as a gain or loss in the same revenue or expense account where the hedged transaction is recorded" (p. 76). For some cash flow hedges, such as forwards, futures and collars used to help manage changing market prices, Suncor uses hedge accounting. TransCanada Corporation (TransCanada Corporation, 2010), another large energy company, applies hedge accounting to transactions that qualify for such treatment. The company records fair value changes in NI for those derivative instruments not qualifying for hedging treatment.

TransCanada treats these as held-for-trading investments. Cenovus Energy Inc. (Cenovus Energy Inc., 2010) does document certain transactions as hedges for hedge accounting treatment. The company records all other derivatives not designated as hedges, using the same mark-to-market accounting treatment as that applied by TransCanada Corporation. Penn West Energy Trust (Penn West Energy Trust, 2010) is the one large oil and gas-producing company examined which does not use hedge accounting. Penn West states in their financial statements "All risk management assets and liabilities are derivative financial instruments designated as held-for-trading" (p. 8). The company records any fair value changes in these derivatives in NI. Pengrowth Energy Trust applies the same classification and treatment with its derivatives: "All derivatives are classified as held-for-trading which are measured at fair value with changes in fair value over a reporting period recognized in net income." (p. 41). Another mid-sized company, Bonavista Energy Trust (Bonavista Energy Trust, 2010) states that "all derivative contracts are classified as held-for-trading and are recorded on the balance sheet at fair value, with changes in the fair value recognized in net income, unless specific hedge criteria are met" (p. 6). For the remaining two mid-sized and for all the small companies examined, derivatives used for hedging purposes are classified as held-for-trading with changes in fair value recorded in NI for the period in which the changes occur. These companies do not use hedge accounting.

With regard to whether those companies using derivatives speculate, 11 of the 12 companies examined state outright that they do not use derivatives to speculate. For example, Crew Energy Inc. (Crew Energy Inc., 2010), when referring to how it accounts for financial instruments, states, "The Company does not use these derivative instruments for trading or speculative purposes" (p. 29). Similarly, in accounting for its derivative financial instruments, Birchcliff Energy Ltd. (Birchcliff Energy Ltd., 2010) states that the company's "policy is not to utilize derivative financial instruments for speculative purposes" (p. 70). Fairborne Energy Ltd. (Fairborne Energy Ltd., 2010) states in its annual financial statements that the "Company's practice is not to utilize financial instruments for trading or speculative purposes" (p. 28). Of the twelve companies examined, only Suncor Energy Inc. (2010) explicitly stated in their financial statements that they utilize derivatives for trading as well as non-trading activities. In the notes to their annual financial statements, Suncor states that the company "also uses derivatives for trading purposes" (p. 74), and "When used in a trading activity, the company is attempting to realize a gain on the fluctuations in the market value of the derivative" (p. 74).

All companies examined were consistent in their understanding of the financial risks facing their companies. Without exception, each company identified commodity price, foreign currency, interest rate, liquidity and credit as the main risks that their risk management programs and strategies dealt with. In addition, all companies shared the same view regarding the derivatives that best manage their financial risks, especially commodity price risk. Derivatives of choice were oil and natural gas swaps, collars and forwards. Larger companies also used interest rate swaps; while those in broader energy related lines of business also used electricity swaps and specific transaction hedges. However, in terms of managing commodity price risk, all firms were consistent in their derivative use.

With regard to hedge accounting, nine of the twelve firms examined do not use hedge accounting. As mentioned previously, the cost of hedge accounting can be onerous. The majority of the small and mid-sized companies examined do not use hedge accounting and one reason is likely the ongoing cost to do so. Only the large oil and gas companies employ hedge accounting. Arguably, since small and mid-sized oil and gas companies are measured against their peers by analysts and shareholders, as long as they are consistent in their accounting and presentation, the fact they don't use hedge accounting is likely not an issue. If failing to use hedge accounting introduces volatility to their reported earnings, it is not so much an issue if all their peers are reporting in like manner. For the large oil and gas companies, the costs of compliance with hedge accounting are not as significant as they are to the smaller energy companies, so they are more likely to see the benefits of hedge accounting and not just the costs.

With regard to speculation carried out by oil and gas company management, only one company, Suncor (2010), specifically refers to its trading of derivatives for profit. The other companies examined specifically state in their financial statements they do not use derivatives to speculate. However, referring again to Whaley's (2006) definition of speculation, being that "a trading position established to profit from a directional move in the price of an asset" (p. 887), there is a strong argument to be made that these companies do in fact, speculate. Although all companies are consistent in their view of what constitutes commodity price risk, and the strategies and derivatives used to mitigate that risk, they are inconsistent in what portion of that risk to hedge. For example, Crew Energy's (2010) policy is to "enter into commodity price contracts when considered appropriate to a maximum of 50% of forecasted production volumes for a period of not more than two years" (p. 33). Iteration Energy Ltd. (Iteration Energy Ltd., 2010), another smaller oil and gas company "may commit up to 35% of its production hedged spanning up to two years forward" (p. 6). The Board of Directors of Bonavista Energy Trust (Bonavista Energy Trust, 2010) one of the mid-sized oil and gas companies examined "has approved a commodity price risk management limit of 60% of forecast production" (p. 5). One of the large energy companies, Penn West Energy Trust (Penn West Energy Trust, 2010) in their MD&A report state they will use derivatives to manage their commodity price risks up to 50 percent of forecasted sales volumes up to two years out and up to 25 percent for one additional year thereafter.

Not only is there variance in risk management oversight in terms of a limit in the percentage of production hedged, there is variance in the actual percentages hedged. For example, Iteration Energy Ltd. (2010), with a 35 percent hedging limit on commodity risk, had hedged 23 percent of forecast 2010 production at its December 31, 2009 year-end. Pengrowth Energy Trust (Pengrowth Energy Trust, 2010) as at the same date had 34 percent of 2010 oil production hedged and 45 percent of natural gas volumes. The variances between companies in terms of hedge limits and the production volumes hedged gives rise to the question of what exactly is the purpose of having hedge limits approved by the Board of Directors.

In addition, once limits are established, why do companies not hedge right to the Board approved limit? Concerning the first question, it is not clear from the financial statement information examined, what the reason is behind different companies setting different hedge limits. If all management teams are in the same industry, with the same price, demand and supply information, how do they each arrive at a different hedge limit? If the goal of hedging is really to manage financial risk, why do these companies not hedge 100 percent of their forecasted production for the year? By analogy, a Canadian company purchasing new equipment manufactured in the United States and concerned about foreign currency risk would likely fully hedge the transaction and not simply a portion of it. If management were to hedge, say, 50 percent of the purchase on the expectation of the Canadian dollar strengthening so they would end up paying fewer Canadian dollars than if it were fully hedged, they would be speculating. If they hedged 100 percent of the transaction, then subsequently determined the Canadian dollar was going to strengthen vis-à-vis the U.S. dollar and then lifted a portion or the entire hedge in anticipation of a gain, they would be speculating. Extending this example to the oil and gas industry, if the management teams in these energy companies really wanted to remove price risk on their oil and gas commodities, why are they not hedging 100 percent of their forecasted production? If the company's risk management goal is to eliminate price risk, why hedge only a portion of anticipated production? Management of these companies consistently state they do not use derivatives for hedging, yet they vary from year to year the percentage of their production they hedge.

Effectively these companies are speculating by deciding to stay exposed to a portion of their identified risk. If they were not speculating, they should consistently be hedging to the full hedge limit authorized by their respective Boards of Directors. These various management teams must be using their judgment regarding current and future commodity prices and deciding at different points in time, how much of their production to hedge. It is possible the companies' Boards of Directors set maximum hedging percentages to limit the amount of speculation that management carries out.

Guay & Kothari (2003) provide several reasons explaining why companies might maintain a derivatives program even though that program has a relatively small impact on total company risk. One of the applicable reasons for oil and gas companies' use of derivatives might be to manage internal decisions (e.g., performance evaluation). Another might be to use derivatives "for purposes other than those predicted by traditional risk-management such as to speculate on asset prices or to mitigate the likelihood that changes in asset prices increase analyst forecast errors" (p. 453). It is difficult to determine from external financial statements how the use of derivatives might influence internal decisions such as performance evaluation, since companies do not disclose that type of information in annual reports and financial statements. However, there is a strong argument that management teams in the energy industry use derivatives in a manner not only to hedge but also to speculate. It is not clear from examining annual financial statements whether derivatives are used to manage analyst forecast errors as, again, this type of information or management decision making is not disclosed in annual financial reports.

It is interesting that it is the largest company examined (Suncor Energy Inc.) that states clearly it does trade in derivatives for profit. Perhaps, being one of the largest oil and gas companies in Canada with total assets approaching Cdn $70 billion and total revenues of Cdn $25 billion, Suncor is in a much better financial position than its peers to take on more financial risk and absorb more losses, should they occur. It may also be a situation where, being such a large company with a significant internal trading group, Suncor may attract more talent in the derivative area than its peers in the energy industry. F. A. Hayek (Hayek, 1945) observed that in any given economy, no single mind has all knowledge necessary to understand and manage that economy. However, there is "knowledge of the particular circumstances of time and place" (p. 521). By attracting experienced and knowledgeable employees around which to build a trading department, the likelihood of having the necessary expertise within the company for profitable trading activities increases.

CONCLUDING COMMENTS

The goals of this paper were to examine the publicly available financial reports of a sample of Western Canadian oil and gas companies to determine whether they i) have documented risk management strategies for dealing with financial risks, ii) make use of derivatives to help manage their financial risks, iii) make use of common strategies with derivatives in managing their risks, iv) practice hedge accounting, and v) speculate. In answering these questions, annual financial statements and MD&A reports of twelve publicly held energy companies (primarily oil and gas, and piplines) were examined. There was sufficient publicly available information to conclude that i) all companies examined have documented risk management strategies; ii) all companies examined use derivatives to help manage their financial risks; iii) common risk management strategies using derivatives are employed by all companies examined; iv) nine of the twelve companies examined do not employ hedge accounting, and the three that do are large companies, and; v) all companies may not use specific derivatives to speculate but they do in fact speculate by choosing not to hedge all of their risks.

The benefit of these results includes the acknowledgement that all oil and gas companies deem it important to have a documented risk management strategy disclosed to shareholders and other users of the company's financial statements. The results of this paper show that financial managers of publicly held oil and gas companies do manage a portion of their commodity price risks and use common derivatives and derivative strategies to do so. With regard to the lack of hedge accounting employed in the oil and gas industry, the results provide a useful benchmark to help measure the oil and gas industry impact of the current IASB exposure draft on hedge accounting, once it is implemented. It will be interesting to see if the the exposure draft's objectives of better aligning hedge accounting with risk management practices is acknowledged by Canadian energy companies through increased use of hedge accounting. In the IASB's strategy to have financial statements better reflect economic reality (e.g., balance sheet accounts carried at fair value rather than historical cost), it will be interesting to see whether

the small and medium sized oil and gas companies do adopt hedge accounting. This paper demonstrates there is a disconnect between oil and gas companies financial statement disclosures surrounding definitions of hedging and speculation and whether firms do, in fact, speculate. This may simply require a clearer definition and understanding in the financial statements of what constitutes hedging and speculation. This could more accurately portray the actions and positions financial risk managers take when they decide to hedge only a portion of an identified risk.

Relying on archival data, here audited annual financial statements and annual reports, does not provide all the information necessary to draw definitive conclusions on some of these research qestions. For example, in trying to determine why companies use derivatives in managing financial risk, it would be necessary to actually immerse oneself in a company's operations, and engage with those involved in company risk management activities to understand the motivations, analysis and thought processes behind their actions. There are many opportunities for future research in the area of financial risk management, financial accounting, and the use, measurement, recording and disclosure of derivative activity in publicly available information such as company annual reports and financial statements. For example, there are research opportunities in determining the true motivation(s) for entity-level derivative use, versus the individual shareholder/investor level. Also, there are real opportunities to measure the impact of hedge accounting changes and whether and how they influence the oil and gas industry reporting. There are also opportunities to engage company management including Directors, investors, analysts and other users of financial statements in discussion concerning the financial risks companies face, including how and why derivatives are used to mitigate or eliminate these risks. Opportunities also exist to investigate why there is such variability between firms as to commodity hedge limit percentages, and why and how firms choose to hedge less then their authorized limits.

Future research envisions the use of a larger sample of companies. The types of derivatives used by those companies can yield a number of potential correlations between the company size and the type of hedging used by the members of the companies of each size. This research can also verify the validity of the division of the companies using size criteria.

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MODELING OPERATIONAL EFFICIENCY USING DATA ENVELOPMENT ANALYSIS: EVIDENCE FROM ATLANTIC CITY HOTELS

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ABSTRACT

The casino entertainment industry is an intensely competitive environment with many operational risks, explaining why casino managers highly prioritize performance evaluation. This study develops a performance evaluation model based on data envelopment analysis (DEA) to determine casino managerial efficiency in 2007 and the change in efficiency for eleven casinos from 2003-2007 in Atlantic City. Analytical results suggest an apparently high technical efficiency and low scale efficiency, indicating that managerial inefficiency derives mainly from an inappropriate scale of business in the casino entertainment industry of Atlantic City. Moreover, weak industrial growth of casino entertainment implies that front runners should closely examine systematic problems in their management strategies.

JEL: C44, C61, G00

KEYWORDS: Data envelopment analysis (DEA); Performance evaluation; Casino management
Slacks-based measure (SBM), Managerial efficiency

INTRODUCTION

Legalized gaming in the form of casino entertainment is burgeoning worldwide. As is widely assume, casino entertainment stimulates tourism driven industries, generates tax revenues, and provides employment opportunities (Long, 1995). According to the American Gaming Association (AGA), the casino entertainment industry in the United States garnered US$34.13 billion in revenue, contributed US$5.79 billion in direct gaming tax revenues, and employed 360,818 individuals who received wages of US$13.8 billion in 2007. The North American casino entertainment industry, with its successful corporate structure, operates in a transparent and highly competitive environment (Gu, 2002). Casino gambling has established itself as a strong economic and societal influence in the United States (Garrett and Nichols, 2007).

However, widespread layoffs, tight consumer credit and a depressed housing market stemming from the current global recession that originated in the United States adversely impacted the American casino entertainment industry in 2007. The current global economic recession and anemic consumer confidence may continue to deteriorate consumer demand for leisure activities and corporate revenues in this industry. Historical trading data of various hotel categories and related establishments suggest that luxury hotels, such as casinos, tend to be more vulnerable to operating risks than full and limited service hotels (Younes et al., 2007).

The stringently competitive nature of the casino entertainment market in the United States (Gu, 2002) necessitates that managers fully utilize knowledge expertise to increase efficiency in operations management. Therefore, this study analyzes resource utility efficiency in the casino entertainment industry in Atlantic City by closely examining the managerial efficiency, pure technical efficiency (PTE), mixed managerial efficiency (ME) and scale managerial efficiency (SE) of a sample of casinos through the adoption of data envelopment analysis (DEA). Additionally, cross-period efficiency analysis is performed via the Malmquist index, and a managerial decision-making matrix is developed based on relative efficiency by varying productivity across a certain period to increase the efficiency of the casino entertainment industry in Atlantic City. The remainder of this paper is organized as follows. The next

section describes the literature review. The data and model are shows in section II. The empirical findings and discussed in section III. Finally, concluding remarks are presented in the last section.

LITERATURE

New Jersey citizens voted in 1976 to legalize casino gambling in Atlantic City. Its establishment significantly contributed to the expansion of casino gaming across the United States (Karmel, 2007). Las Vegas, Atlantic City, and metropolitan Chicago, Illinois accounted for 38% of casino generated revenues in the United States, with Atlantic City ranking as the second largest gambling market. The casino entertainment industry in Atlantic City grossed US$4.92 billion in revenue, employed approximately 40,000 individuals, generated US$ 474 million in tax revenues, and brought in 33 million visitors in 2007, all of which represent a tremendous contribution economically. Despite these impressive statistics, the casino entertainment industry in Atlantic City faces tremendous challenges and intensified competition from the economic downturn, global financial crisis, new gaming jurisdictions and further restrictions in local smoking laws, ultimately decelerating revenue growth in 2008. From that period, Atlantic City casinos declined in gross operating profits by 19.5%, which represents the largest decline of profit rate for the past five years.

Efficiency determination has received considerable interest as organizations struggled to increase productivity (Cook and Seiford, 2009). Efficient operations of tourist sites are important to help maintenance and obtainment market share of tourism in the world (Cracolici *et al*., 2008). Several studies have attempted to measure the efficiency and performance of the commercial hotel industry by using DEA. Table 1 lists the input/output variables of the categories. In those studies, production resources were input with categories in substance by distinguishing between operating expenses, labor and property. Revenues and non-revenue categories with respect to outputs were also measured.

Table 1 Evaluation of Data Envelopment Analysis variables in commercial hotels

Input/Output	Categories	Variables	Literature
Inputs	Expenses	. Operating expenses	Botti *et al*., 2009
		. Other expenses	Chen, 2009
	Labor	. Number of employees	Barros and Dieke, 2008
		. Wages	Yu and Lee, 2008
		. Labor working hours	Chiang, 2006
	Property	. Dimension of hotel/meal	Wang *et al*., 2006
		. Number of guestrooms	Barros, 2005
		. Book value of property	Barros and Mascarenhas, 2005
Outputs	Revenue	. Total revenue/sales	Sun and Lu, 2005
		. F & B/Room/other revenue	Chiang *et al*., 2004
	Non-revenue	. Number of guests	Brown and Ragsdale, 2002
		. Customer satisfaction	
		. Occupancy rate	

This table shows input and output, data envelopment analysis measures used by authors in the literature.

The operational performance of the casino entertainment industry has been evaluated based on regression analysis. Lee and Park (2009) focused on factors involving the financial performance of casinos, in which they examined how corporate social responsibility (CSR), firm value and profitability for hotels and casinos are related. According to their results, CSR has a simultaneous and positive relation with financial performance. Several studies that evaluated the performance of the casino entertainment industry undertook financial analysis. While adopting the Grey system method, Lin and Lee (2008) devised financial criteria to discuss the operational performance of casinos. Gu (2002) conducted financial ratio analysis to identify performance gaps in the casino entertainment industry between the United States and Europe by analyzing revenue efficiency, profitability and cost performance. Jang and Yu (2002) analyzed return on hotel and casino investment based on financial data, indicating casinos are extremely effective in using assets to generate revenue. More than a reference in decision making, performance evaluation is

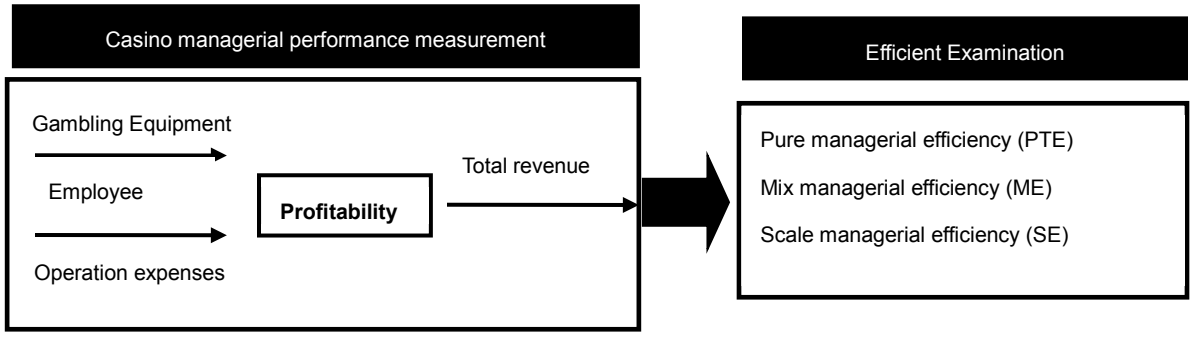
also the basis of improvements productive efficiency and strategies (Zhou, Huang and Hsu, 2008; Jang and Yu, 2002). While solving a portion of a problem, financial ratio analysis does not offer a comprehensive perspective on resource adjustment and improvements. There are few studies in develop a model to assess managerial efficiency of casinos.

DATA AND METHODOLOGY

Data were obtained from the State of New Jersey Casino Control Commission, based on financial reports and New Jersey casino gaming economic impact reports from 2003-2007. Eleven casinos comprised the sample size, with each casino treated as a decision making unit in this study. This study assumed that DEA inputs and outputs should be selected according to the common services that the casino industry provides. Casino hotels provide two main primary services: (1) gambling and (2) other services, including accommodations, food and beverages. These services constitute more than 80% of all casino revenues from slot and table games and other revenues from rooms, food and beverage, which do not exceed 20%.

This study identifies various operational inefficiencies in casinos, which are subsequently decomposed into pure technical managerial efficiency (PTE), mixed managerial efficiency (ME) and scale managerial efficiency (SE) in Atlantic City via the transformation process by using DEA.The DEA-based measurement model considers three inputs and one output parameter. The inputs which are defined as follows: (1) input variables indicated the gambling equipment (I_1) as tables and slot machines to generate gambling revenue; (2) employees (I_2) indicated all departmental employees; and (3) operational expenses (I_3) indicated expenses spent on operations. The outputs defined as follows: total revenues (O_1) indicated revenues from casinos, room, foods and beverage and other revenues. Figure 1 shows the managerial performance analysis procedure.

Figure 1: The Managerial Performance Analysis Procedure



This figure shows the managerial performance measurement procedure.

Charnes *et al*. pioneered the data envelopment analysis (DEA) model in 1978, with many related models developed in recent years. DEA rests on the premise that, within a set of comparable decision making units (DMUs), those that exhibit the best practice can be identified and form an efficient frontier (Cook and Seiford, 2009). DEA-related models such as constant returns to scale (CRS) and varying returns to scale (VRS) compare many input/output parameters simultaneously to provide both a scalar measure of relative efficiency and efficient targets, as well as benchmark peer groups for inefficient firms (Cooper *et al*., 2006; Tone, 2001). Additionally, the DEA-based Malmquist productivity index can measure changes in the efficiency of production unit in transforming inputs into outputs according different periods, as well as analyze which DMUs are an improvement or are slow.

Constant Returns to Scale (CRS) Model

The optimum practice frontier that exhibits constant returns to scale is determined using the CCR model (Charnes *et al*., 1978). Assume that there are n DMUs, with each DMU $j\,(j=1,2,\cdots,n)$, and

consumes m inputs $x_{ij}\ (i=1,2,\cdots,m)$ and produces s outputs $y_{rj}\ (r=1,2,\cdots,s)$.

$$\begin{aligned} Max \quad & \theta = \sum_{r=1}^{s} u_r y_{ro} \\ s.t. \quad & \sum_{i=1}^{m} v_i x_{io} = 1 \\ & \sum_{r=1}^{s} u_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} \le 0, \quad j=1,2,\cdots n \qquad u_r, v_i \ge 0 \end{aligned} \tag{1}$$

where $y_{ro}=$ the amount of output r from unit o, $x_{io}=$ the amount of input i to unit o, $u_r=$ the weight given to output r, $v_i=$ the weight given to intput i, and $o=$ the number of units.

Variable Returns to Scale (VRS) Model

Banker *et al.* (1984) extended an earlier work involving the CCR model by providing for variable returns to scale. The VRS model is shown below:

$$\begin{aligned} Max \quad & \theta = \sum_{r=1}^{s} u_r y_{rj} - u_o \\ s.t. \quad & \sum_{i=1}^{m} v_i x_{ij} = 1 \\ & \sum_{r=1}^{s} u_r y_{rj} - \sum_{i=1}^{m} v_i x_{ij} - u_o \le 0, \quad j=1,2,\cdots n \quad v_i \ge 0, \quad u_r \ge 0 \end{aligned} \tag{2}$$

where u_o refers to the intercept and the latter being free in sign may be positive or negative. According to the above description, the CRS scale is called technical efficiency (TE). The VRS model assumes the convex combinations of the observed DMUs as the production possibility set, and the VRS score is called pure technical efficiency (PTE). Based on the CRS and VRS scores, scale efficiency (SE) is defined as Eq. (3) if a DMU has the full VRS efficiency but a low CRS score.

$$SE = \frac{\theta^*_{CRS}}{\theta^*_{VRS}} \tag{3}$$

The VRS expresses the pure technical efficiency under VRS circumstances. Using these concepts, relationship Eq. (3) demonstrates a decomposition of efficiency as Eq. (4):

$$TE = PTE \times SE \tag{4}$$

Slacks-Based Measure (SBM) of Efficiency Model

Tone (2001) proposed a slacks-based measure (SBM) of efficiency in DEA and measure deals directly with the input excesses and the output limitations of the DMU concerned. A SBM of efficiency is defined, along with its interpretation as a product of input and output inefficiencies. Two efficiency measures are radial and non-radial measures of efficiency, and CCR and SBM are also called radial and non-radial measures of efficiency, respectively. By assuming that n DMUs with the input and output matrices $X=(x_{ij}) \in R^{m\times n}$ and $Y=(y_{ij}) \in R^{s\times n}$, respectively, the input-oriented SBM model is formulated as follows:

$$\begin{aligned} Min \quad & \rho_{in} = \frac{1-(1/m)\sum_{i=1}^{m} s_i^- / x_{io}}{1+(1/s)\sum_{r=1}^{s} s_r^+ / x_{ro}} \\ s.t. \quad & x_o = X\lambda + s^- \\ & y_o = Y\lambda - s^+ \qquad \lambda \geq 0, \quad s^- \geq 0, \quad s^+ \geq 0 \end{aligned} \tag{5}$$

where ρ_{in}^* denotes SBM scores and λ represents a nonnegative in R^n. Additionally, s^- and s^+ represent the input excess and output shortfall of expression, respectively, and are called slacks. The mixed efficiency (ME) is defined as $ME = \frac{\rho_{in}^*}{\theta_{CRS}^*}$. By using Eq. (4), the non-radial technical efficiency ρ_{in}^* has the decomposition into ME, PTE and SE, as shown $\rho_{in}^* = ME \times PTE \times SE$.

Cross-Period Efficiency

Färe *et al*. (1992) constructed the Malmquist productivity index to extend the DEA-based assessment of the cross-period efficiency model. The Malmquist productivity index can be used to determine productivity change in a production unit, which measures changes in the efficiency of a production unit in transforming inputs into outputs from time t to time $t+1$. Evaluating the change in the technology frontier and the other change in technical efficiency are two components for the Malmquist productivity index. The input-based Malmquist productivity index can be formulated as Eq. (6).

$$M_o = \left[\frac{\theta_o^t\left(x_o^t, y_o^t\right)}{\theta_o^t\left(x_o^{t+1}, y_o^{t+1}\right)} \frac{\theta_o^{t+1}\left(x_o^t, y_o^t\right)}{\theta_o^{t+1}\left(x_o^{t+1}, y_o^{t+1}\right)} \right]^{\frac{1}{2}} = \frac{\theta_o^t\left(x_o^t, y_o^t\right)}{\theta_o^{t+1}\left(x_o^{t+1}, y_o^{t+1}\right)} \cdot \left[\frac{\theta_o^{t+1}\left(x_o^{t+1}, y_o^{t+1}\right)}{\theta_o^t\left(x_o^{t+1}, y_o^{t+1}\right)} \frac{\theta_o^{t+1}\left(x_o^t, y_o^t\right)}{\theta_o^t\left(x_o^t, y_o^t\right)} \right]^{\frac{1}{2}} \tag{6}$$

where M_o refers to the productivity change between periods t and $t+1$. Additionally, $\theta_o^t\left(x_o^t, y_o^t\right)$ and $\theta_o^{t+1}\left(x_o^{t+1}, y_o^{t+1}\right)$ denote the technical efficiency score for DMUs in time period t and $t+1$, respectively.

EMPIRICAL ANALYSIS

Table 2 summarizes the results of correction analysis with input and output variables. The three inputs have two inputs that are positively associated with each other. Hence, casinos that use high input levels tend to achieve a high performance in each output category. The highest correlation coefficient is 0.9925, found between the total operating expense (I_3) and total revenue (O_1). The lowest correlation coefficient is 0.8186, which also belongs to the highest correlation coefficient, found between gambling equipment (I_1) and number of employee (I_2).

Table 3 summarizes the information of inputs and outputs variables. The gambling equipment ranges from 2,024 to 5,346, with a mean value of 3,384. The two input measures are summarized as follows. The number of employees has a mean value of 3,727, ranging from 2,152 to 6,950. Total operating expenses have a maximum (min.) value of $789,697 ($267,013), with a mean value of 455,219. Casino revenue ranges from $303,545 to $1,034,679 with a mean value of $568,730.

Table 2 Correction Coefficients among Input and Output Variables

Input/Output	Gambling equipment (I_1)	Number of employee (I_2)	Total operating expense (I_3)	Total revenue (O_1)
Gambling equipment (I_1)	1			
Number of employee (I_2)	0.8186	1		
Total operating expense (I_3)	0.8482	0.9896	1	
Total revenue (O_1)	0.8431	0.9696	0.9925	1

Table 2 shows the results of correlation analysis between the input and output variables.

Table 3 Descriptive Statistics for Eleven Casinos in Atlantic City in 2007 (US$)

Input/Output	Variables	Mean	Minimum	Maximum	Std. Deviation
Inputs	Gambling equipment (I_1)	3,384	2,024	5,346	991.35
	Number of employee (I_2)	3,727	2,152	6,950	1,448.22
	Total operating expense (I_3)	455,219	267,013	789,697	158,953.54
Output	Total revenue (O_1)	568,730	303,545	1,034,679	227,541.70

This table provides summary statistics for the input and output variables.

Table 4 shows that the three forms of managerial efficiency, i.e. PTE, ME and SE, by applying input-oriented CCR, BBC and SBM models of DEA. The top three of the eleven casinos evaluated by efficient with a managerial efficiency score are Borgata (A_3), Caesars (A_4) and Harrah's (A_5).

Table 4: Decomposition of Managerial Efficiency for Atlantic City Casinos

No	Casinos in Atlantic City (DMU)	SBM efficiency	PTE	ME	SE	Returns to scale
A_1	AC Hilton	0.788	0.941	0.968	0.865	Decreasing
A_2	Bally's Park Place	0.825	0.933	0.898	0.985	Decreasing
A_3	Borgata	1	1	1	1	Constant
A_4	Caesars	1	1	1	1	Constant
A_5	Harrah's	1	1	1	1	Constant
A_6	Resorts	0.699	0.924	0.879	0.861	Decreasing
A_7	Showboat	0.875	1.000	0.888	0.985	Decreasing
A_8	Tropicana	0.860	0.975	0.917	0.961	Decreasing
A_9	Trump Marina	0.788	1.000	0.942	0.837	Decreasing
A_{10}	Trump Plaza	0.799	0.980	0.941	0.867	Decreasing
A_{11}	Trump Taj Mahal	0.857	0.929	0.940	0.981	Decreasing
	Mean	**0.863**	**0.971**	**0.943**	**0.940**	

This table shows the three forms of managerial efficiency by applying input oriented models.

Table 5 summarizes the analysis results of the cross-period efficiency change. The model evaluates the change in efficiency via Malmquist analysis to assess the performance of effectiveness variations from 2003 to 2007. According to the results, over the past five years, the best efficiency change is Borgata (A_3).

Figure 2 shows the decision-making matrix and the analysis results. This matrix is divided into four groups by the two criteria of relative efficiency and efficiency change. By integrating the analysis results of the relative efficiency and efficiency change, this study illustrates a decision-making matrix to help casino entertainment managers to position themselves in the industry and to provide directions for increasing efficiency. Four groups described as following.

In the quadrant Ⅰ there are no category in this area of the decision-making matrix decreases, indicating that casino entertainment industry in Atlantic City get has matured and is likely in a stage of decline. The quadrant Ⅱ includes three casinos are Borgata (A_3), Showboat (A_7) and Tropicana (A_8). Casinos in this area belong mainly to mixed inefficiency problems and not only suggest resource adjustment in scale

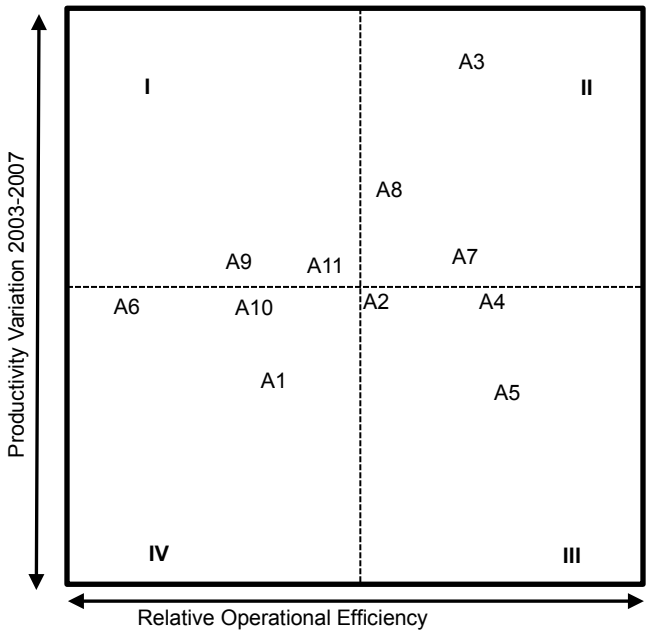
diminution and renewable equipment, such as a slot machine, to attract tourists but also increase revenue at same time.

Table 5: Decomposition of the Malmquist Index from 2003-2007

No.	Casinos in Atlantic City (DMU)	Cross-period performance (2003-2007)		
		Catch-up	Frontier	Malmquist
A_1	AC Hilton	0.878	1.112	0.976
A_2	Bally's Park Place	1.006	1.106	1.113
A_3	Borgata	1.639	1.073	1.759
A_4	Caesars	0.970	1.129	1.096
A_5	Harrah's	0.901	1.055	0.950
A_6	Resorts	0.991	1.105	1.095
A_7	Showboat	1.016	1.120	1.138
A_8	Tropicana	1.142	1.107	1.264
A_9	Trump Marina	1.000	1.109	1.109
A_{10}	Trump Plaza	0.975	1.109	1.082
A_{11}	Trump Taj Mahal	1.013	1.111	1.126
	Mean	1.048	1.103	1.155

This table shows a decomposition of the Malmquist Index. The analysis uses data from 2003-2007.

Figure 2: Managerial Decision-Making Matrix of the Performance Model in Atlantic City



Note: A_1: AC Hilton; A_2: Bally's Park Place; A_3: Borgata; A_4: Caesars; A_5: Harrah's; A_6: Resorts; A_7: Showboat; A_8: Tropicana; A_9: Trump Marina; A_{10}: Trump Plaza; A_{11}: Trump Taj Mahal

The quadrant Ⅲ area includes Caesars (A_4) and Harrah's (A_5), which represent higher efficiency than the remaining ones without A_3. The casinos falling in this area largely stress feeble growth and rather than improving, this far-reaching systematic problem arises from a significant decline in growth annually. Casinos belonging to this category must cautiously approach future strategies. Finally, the quadrant Ⅳ includes AC Hilton (A_1), Resorts (A_6), Trump Marina (A_9) and Trump Taj Mahal (A_{10}). Casino belonging to this area is unsuitable for scale productivity and apparently decreasing returns to scale. Therefore, casinos should reduce its operating scale to achieve optimum productive scale by taking measures such as disposing of idle assets and previously used equipment.

Both casinos A_2 and A_{11} perform moderately in terms of contemporary efficiency and do not significant increase in variation in productivity, which requires attention in the decline in quadrant Ⅳ. The problem in this area is largely attributed to technical inefficiency in advanced services or technical productivity, such as in improvements in novel slot machines to attract tourists.

CONCLUSIONS AND DISCUSSION

The tourism sector is especially sensitive to reductions in discretionary consumer spending as a result of economic downturns. Casinos have high operational risks and belong to a much more competitive environment than commercial hotels. Assets and production resource management have a heightened role of importance owing to the challenge posed by intensified competition and declining profits. Performance evaluation is thus a critical aspect of casino management because performance evaluation provides information deemed essential for coordinating casino resources and capturing a market advantage. However, previous studies failed to develop a measurement model in order to increase casino managerial efficiency. Importantly, this study contributes to efforts of casino entertainment managers to increase overall productivity through performance evaluations, as well as strengthen its industrial competitiveness. Furthermore, results of this study provide a valuable reference for future casino managerial practices. Empirical results indicate that casinos generally experience decreasing returns to scale and weak growth rate in Atlantic City.

This study develops an evaluation model to assess the operating performance of casinos, in which the DEA method is adopted to evaluate the comparative efficiency of the casino entertainment industry in Atlantic City. Moreover, managerial inefficiency and strategy are improved with respect to the extent of managerial inefficiency caused by scale, technical or mixed inefficiency that is integrated with cross-period analysis. Future research can use DEA model to evaluation managerial efficiency and performance in gambling market. And then future research can explore the managerial performance by pure technical managerial efficiency (PTE), mixed managerial efficiency (ME) and scale managerial efficiency (SE).

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ESTIMATION OF OPERATIVE RISK FOR FRAUD IN THE CAR INSURANCE INDUSTRY

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ABSTRACT

The regulatory framework for assessing and risk measurement in most companies focuses primarily on proposals of the New Capital Accord (Basel II). The Basel Committee gives importance to the concept of operational risk and requires that financial institutions cover possible loses with capital. The goal is to identify expected losses because of different events that might arise in firm management. This work develops a model to estimate the monetary loss due to car theft for Columbian insurance companies. We estimate the probability functions of monetary losses for car theft. First we estimate the distribution functions of the number of car thefts and for the monetary loss. Then, we use Monte Carlo simulation to identify the severity of expected losses. The results and conclusions will be useful for insurance firms. Using the results here, they can set up guidelines to improve risk management.

JEL: G22; C15

KEYWORDS: Insurance, Operational Risk, Simulation, Loss Distribution Aggregated.

INTRODUCTION

Is important to identify and value enterprise operational risk. Potentially, the operative faults affect all businesses. Manufacturing enterprises, commercial, financial services both large and small could experience monetary losses caused by their workers, internal and external frauds, human and technical wrongs, government policies or economic cycles. Company exposure to monetary loss may be higher or lower for several reasons. We find some conflicts between interests between rapid growth, internal changes, financial condition, weak culture control and corruption in the country or region. Not only do giants like Enron and governments have losses because of fraud but also small financial institutions and small businesses experience losses (Sivirichi, 2010). In Colombia, manufacturing companies, services and financial markets enterprises undergo constant development and transformation that dramatically increases the likelihood of adverse events. This creates an unending dynamic, marked by mergers and takeovers, internal streamlining and technical upgrading.

In addition, the complexity of transactions associated with product life cycle cause exposure to operational risk. This paper supplies a knowledge base to build an organized view of management. We quantify operational risk and measure risk events. This work is split into three parts: The first focuses on generic ideas and definitions of operational risk, based on the Basel Committee approach. In the second phase we show the present state of the insurance sector against losses because of car theft in the region. The third part shows how to use probability distribution functions to model the number of stolen cars and monetary losses - from 2004 to 2009-. Finally, we use Monte Carlo Simulation (MS) to identify the severity of expected car theft losses for 2011.

LITERATURE REVIEW

Simulation is accepted widely in both an educational and business context. It helps us to explain and predict and identify best solutions to decision problems. It also provides an in depth analysis when we want to assess events with high degree of uncertainty. In addition, the simulation provides comprehensive vision of the event under study and overcomes limits of analysis based only on historical

data. It describes the behavior by a probability distribution function and therefore considers the probabilities of events happening.

Evans (1998) define simulation as the procedure of building a logical-mathematical model that represents an observable fact and allows us to experiment with it, to understand behavior and help us make decisions. It is important to identify "inputs" and their probability distribution function. We must also define interdependencies to describe behavior by means of covariance or correlation analysis to explain the expected behavior. Meanwhile, Fiorito (2006) shows how simulation is useful in problems or circumstances that involve uncertainty. The model is useless if it does not help users understand the problem. So the simulation lets us conduct experiments with models and analyze the results.

We quantify the economics loss to operative risk events by Operative Value at Risk (OpVaR). Alcántara (2010), shows how the raise on it value, depends on the number of events likely to occur and the severity of these economic losses. Several authors show that economic loss by operational risk typifies probability distribution functions known as heavy-tailed or fat tail distributions, such as Gamma and Exponential, Weibull Lognormal and Pareto generalized other distributions (Chernobai et al., 2007; Panjer, 2006; Venegas, 2008). Economic losses are able to be insured and we can use other estimations including stochastic analysis for insurance businesses (Daykin 1994).

Several authors argue that model selection depends on risk behavior. We wish to know the degree of exposure and severity of risk events faced by institutions in specific macroeconomic environments. These can be recessive or protectionist. In the same way, they depend on the overseeing regulatory institutions or the specific information recorded in historical risk events (Pathak, 2006; Moscadelli, 2004). On the other hand, when there statistical data about loss events are not available, we can estimate the probability distribution function by means of surveys (Evans, 1998, Da Costa, 2004). Alternatively, we can use more refined methods to measure the exposure to economic loss by operative risk such as "fuzzy logic" (Medina 2010).

We highlight the importance of recording each risk event that occurs in the company and build a database containing this information. The database should contain for each risk event, information on what happened and the loss estimate. However, the information systems should be integrated with enterprise risk management models (Enterprise Risk Management-ERM-). Next, we describe the research, we show how insurance companies should consider and manage external causes of car theft. The goal is to develop common strategies between insurance companies, professional associations and police institutions. The target is to control car theft and reduce economics loss.

Defining Operational Risk

This section outlines risk of fraud in car insurance companies. The operational risk is the potential loss from an unforeseen event arising from failures or shortages in information systems in internal control systems or errors in processing investment (AFIN S.A. Stock Brokerage). Castillo (2009) defines "operational risk, as the possibility of financial losses incurred by business events or performance, arising from failures or weaknesses in strategic planning, or business management, or related technology, or the information used by external events and includes legal risk. It does not refer to the possibility of losses from unexpected changes in political, economic and social development Castillo (2008). For the operational risk assessment, companies mist capture, measure and processing data efficiently. Currently government institutions have regulated and formalized the idea, including rigor in collecting and control operational risk events.

Operational risk must be included by managers in strategic planning. The Basel Committee defines it as the risk of loss from failed or inadequate processes, people and systems or from external events (Basel

Committee on Banking Supervision). Jorion (2000) define the risk as the volatility of expected results, commonly related to the value of assets or liabilities. Typically large organizations rank the four pillars or risk categories: credit risk, market risk, business or strategic risk and operational risk. Operational risk is characterized by external events displaying different levels of severity. They are inherent in all phases and events of enterprise management. Most managers face adverse events, some with unknown probability. Sometimes these adverse events are related to the complexity and variety of tasks and processes or the asymmetry of information available.

Events Associated with Insurance Management in Colombia

The insurance industry is a leading protagonist in the economy, mainly because of its presence as an institutional investor. They promote personal savings, protects assets and production capacity of enterprises from random events and severe losses. In 2008, the insurance industry reached a 2.6% share of GDP, showing its continued expansion and contribution to the country's economic growth. In Colombia, the insurance industry is represented by FASECOLDA – Colombian Federation of Insurers. This is a nonprofit professional association, which brings Columbian insurance and capitalization companies together. FASECOLDA´s strategic management aims to lead development of the insurance industry through advancing accomplishments at the national and international level. To achieve this goal, FASECOLDA collects and analyses general statistics on specific performance of the industry, produces bills for Congress consideration that can impact insurance firms. It also provides technical, legal and economic support to its partners.

A study by Fasecolda, and taken up by the National Institute for Research and Prevention of Fraud (INIF), reveals that from January to September 2010, theft was 4,333 cars with an estimated value of 117,289 million pesos (65 million USD). Different studies show how insurance fraud is considered a misdemeanor. But, since the creation of INIF in 2003, several statistics emerge about insurance fraud convictions. In 2002, the four largest insurers in the country came together for a common goal: to research prevent insurance fraud. They argue the only effective way to counter fraud is to work together. In this collaborative effort emerged INIF, an institution that brings together a group of people with the most advanced technological methods. The goal is to produce concrete results for insurers in their fight against fraud. The INIF, basic objective is to building a culture of antifraud among insurance users and give its partner companies management solutions that decrease fraud risk through internal policies, resulting in efficiency and profitability.

Cities Index and the Most Stolen Cars

Table 1 shows the percentage of stolen insured cars by city. The results show Bogota and Medellin with the highest levels of car theft at 31% and 30% respectively.

Table 1: Percentage of Stolen Insured Cars in a City

City	Percentage
Bogotá	31
Medellin	30
Cali	20
Barranquilla	3
Bucaramanga	1
Others	15

This Table shows the monthly statistics for January-September 2009 and 2010 of car theft for major cities. Data from Fasecolda

Cars, vans and heavy cars are most affected by theft. Allegations of theft are known to the INIF. The prosecution's office allowed the institute access to statistics on the most stolen cars in the country; Table 2 shows the car theft statistics.

Table 2: The Statistics by Car Thefts

Vehicle	Percentage
Cars	49
Truck and Jeeps	20
Heavy Cars	11
Bikes	19
Others	1

Table 2 shows monthly statistics for January-September 2009 and 2010 of car thefts by car type. Cars, vans and heavy car are the most affected theft. Data from Fasecolda

The use of models as taxis is important in theft, says INIF´s director. Chevrolet Spark and Hyundai Atos are the leading theft models in three cities. However, others like Mazda 323, Chevrolet Aveo, Corsa, Renault Twingo and Clio appear on the lists of 'most wanted' by thieves. Criminals frequently use the "carousel scheme" to commit the theft. This involves securing a car, committing fraud then charging the fraud to the insurance company. They recover the car and take it another insurance car in another company, where they repeat the process.

This is easy, because insurance companies often act alone against fraud. Until 2003 there was no authority to function as bridge between insurance companies and police investigators and prosecutors, to help them detect fraud. The INIF director indicates, we have 10 individuals convicted of fraud. INIF and insurance´ companies research, and alert authorities to the fraud methods. Different studies show Columbia has several kinds of fraud. The first is called "planned", and occurs when involved fake accidents to collect insurance or other profit opportunities. Another common practice is called "gemeleo" cars. This involves placing a legal car plate on a stolen car and circulating the car in a different city. In another case a car is reported as stolen to several insurance companies. Multiple claims for collection are submitted. This is call "carousel". We call the third fraud opportunistic. It occurs when the insured simulates and accident so that a third-party will benefit from the civil liability coverage. Finally, we have fraud inflated losses. In this case the loss is real, but the circumstances of claims do not match the real damage to the vehicle. The insured takes this advantage to fix a previously damaged car.

DATA AND METHODOLOGY

According to Castillo, a high percentage of companies in Colombia have a poor concept of operational risk or they are only beginning to understand it. Management carries out audit actions and internal control, to identify the sources of operational risk exposure, but not their quantification (Castillo M, 2008).

There are a set methods to quantify operational risk including MS, extreme value theory, Bayesian trees, and fuzzy logic. These techniques are used depending on the availability information about loss events. We use MS with historical data from 2004 to 2010 on car theft in Colombia, to run the simulation. We adjust the probability distributions to the frequency and severity of loss events that occurred. These adjustments allow us to estimate the loss distribution aggregated (LDA) and in turn to estimate the specific period loss provision (2011). The historical information of frequency and severity of car theft is taken from FASECOLDA.

LDA Model Assumptions

In the LDA model total loss is define as sum of different random losses:

$$S = \sum_{i=1}^{7} \sum_{j=1}^{8} Sij \quad (1)$$

Where Sij represents total loss in (i, j) cell loss matrix. i represents the operative risk analyzed. Several risk operatives are defined by the Basel committee but each company can have its own risk matrix.
j represent the business line of the enterprise.

To calculate each loss S_{ij} in the risk matrix we complete the following computations:

$$Sij = \sum_{R=1}^{n} X_R \quad (2)$$

Where R represents a random variable of the number of risk events in cell *(i, j)* (frequency of events). X_R represents the number of losses in cell *(i, j)* (severity of the event.) From this it follows that losses are the result of two sources of randomness: the frequency and severity The LDA model, used to estimate the appropriate operational risk exploits the following assumptions: a) R, that represent variable frequency and X_R, that represent the variable severity, are independent random variables. b)X_R, represent the severity of loss, within the same class, and is identically distributed. c)X_R, represents the severity of losses within the same class and is independent. According to Frachot et al (2004), the first assumption involves frequency and severity which are independent sources of randomness, while b) and c) symbolize the losses within the same class and are uniform, independent and identically distributed.

Modeling Severity

Now we fit different probability distribution functions to historical data series of operational losses for the car theft business line using 81 months of data from January 1, 2004 to September 30, 2010. Next we find the probability distribution function that best fits the detect data and estimate its parameters. The distribution function achieved suggests the range of loss of each event occurred. Severity of loss is a continuous variable according to the central limit theorem, when n is large. It must be demonstrated that it behaves as a normal distribution. To do this, we define the following: (X) Is the loss in cell (i, j) of the losses matrix (severity of the event). The specific variable follows a probability distribution $F_{ij}(x)$ which we define as:

$$F_{ij}(x) = P(X_{ij} \leq x) \quad (3)$$

Modeling frequency

Frequency is a discrete random variable that incorporates the number of observed theft events in a monthly period, with a given probability of the event. Carrillo (2006) proposed the Poisson distribution to model this variable but if we have historical data, we must search for the optimal distribution function using a goodness of fit test. N_{ij} is a random variable representing the number of risk events in cell (i, j) of the array of events (frequency of events). The specific variable follows a probability distribution $P_{ij}^{(n)}$, which we define:

$$P_{ij}^{(n)} = P(N_{ij} = n) \quad (4)$$

From the FASECOLDA historical data, it is assume that for every 100 insured cars an average of 5.15 are stolen in 2010. This means that the probability of success is small (0.0515). From the database of 81 months, λ = 474 cars month. So we postulate that the proper probability distribution for the random variable is Poisson, but we must prove that the better distribution function is Poisson.

RESULTS

To develop a frequency analysis of car theft we use @Risk. To find the best distribution to apply to car theft data the best fit is identified using a chi-square test at a 95% confidence level. The results show a binomial negative distribution (NegBin) with the largest P-Value of 0.919 as shown in Table 3. We conclude the NegBin probability function provided the best fit for the sample data. No other

Table 3: Test Results for the Frequency

	Input	NegBin	IntUniform	Poisson	Geomet
Function		463	435	447	166
Minimum	365	0	365	0	0
Maximum	586	+Infinity	586	+Infinity	+Infinity
Mean	475.839	475.839	475.5	475.839	475.839
Mode	429	473	365	475	0
Median	472	475	475	476	330
Std. Deviation	41.402	41.069	64.085	21.813	476.339
Skewness	0.290	0.148	0	0.045	2
Kurtosis	3.129	303%	1.8	3.002	9
Chi-Sq Statistic		4.536	52.598	63.429	365.83
P-Value		0.919**	0**	0**	0**

This Table shows the results for the frequency of car thefts. The P-Value of 0.919 allow us to assume that NegBin probability function fits the sample data.

Other graphics such as P-P and Q-Q plots can be used to examine the data fit to the theoretical distribution. The NegBin distribution has the expect value E (X) = 475.83, and a standard deviation of 41.06. The parameter of the binomial negative distribution are K=187 and P=0.282

Analysis of Severity (Losses)

To fit the parametric distributions we must update the losses using an update inflation. The procedure allows us to express the economics loss to a base year 2010. Then, the interpretation is similar to that raised by frequency analysis. Table 4- shows the fit of different distributions to the historical data on losses for each car theft. The results suggest that several distributions have good fit to the data. The best fit is the logistic distribution, which gives a higher p-value of 0.4148. We use a Chi-square test with 95% confidence, and find parameters of the logistic distribution to be α=31.146 and β=2.295.

Table 4: Test Results for the Loss of Each Event of Car Theft (Severity)

	Input	Logistic	Log Logistic	Ext Value	InvGauss	Pearson5
Function		32.983	29.099	25.085	26.655	31.127
Minimum	24.708	-Infinity	18.590	-Infinity	20.650	17.204
Maximum	63.961	+Infinity	+Infinity	+Infinity	+Infinity	+Infinity
Mean	31.469	3.146	31.548	31.459	31.469	31.434
Mode	31.498 [est]	31.146	30.068	29.506	29.030	29.298
Median	31.133	31.146	30.858	30.746	30.621	30.641
Std. Deviation	5.007	4.163	4.570	4.337	4.489	4.43
Skewness	3.392	0	2.085	1.139	1.244	1.378
Kurtosis	24.277	4.2	19.326	5.4	5.582	6.915
Chi-Sq Statistic		9.246	12.950	14.925	16.160	17.395
P-Value		0.4148**	0.1649**	0.093**	0.0636**	0.0429**

This Table shows the results for the severity. As the P-value = 0.4148, the null hypothesis is accept by the severity follows a logistic distribution

The histogram strengthens the conclusion that losses follow a logistic distribution. Using the logistic distribution we see that the histogram midpoints are reached by the continuous logistic distribution function, which reveals its setting. The Kolmogorov Smirnov test is also performed. The results are presented in Table 5. As shown the p-values are higher than the logistic distribution.

Table 5: The Kolmogorov Smirnov Test

Estimated Kolmogorov statistic DPLUS	**0.0732**
Estimated Kolmogorov statistic DMINUS	0.0493
Estimated overalls statistic DN	0.0732
Near P-Value	0.7845**

This table shows the Kolmogorov test results for the severity of car theft. As the P-value = 0.7845, the null hypothesis is accept by the severity follows a logistic distribution

Test of Goodness of Fit

Next, we want to test the hypothesis that the parametric distribution fits the data, given a confidence level (1-α) express as follows:

$H_{o:}$ *the loss data (severity) follows a logistic distribution*

$H_{1:}$ *the severity does not follow a logistic distribution*

If the P-value <= α, we reject $H_{o.}$ With a confidence 95%, α = 0.05. As the p-value of 0.7845 is greater than α = 0.05, the null hypothesis is accepted. Thus, the severity follows a logistic distribution

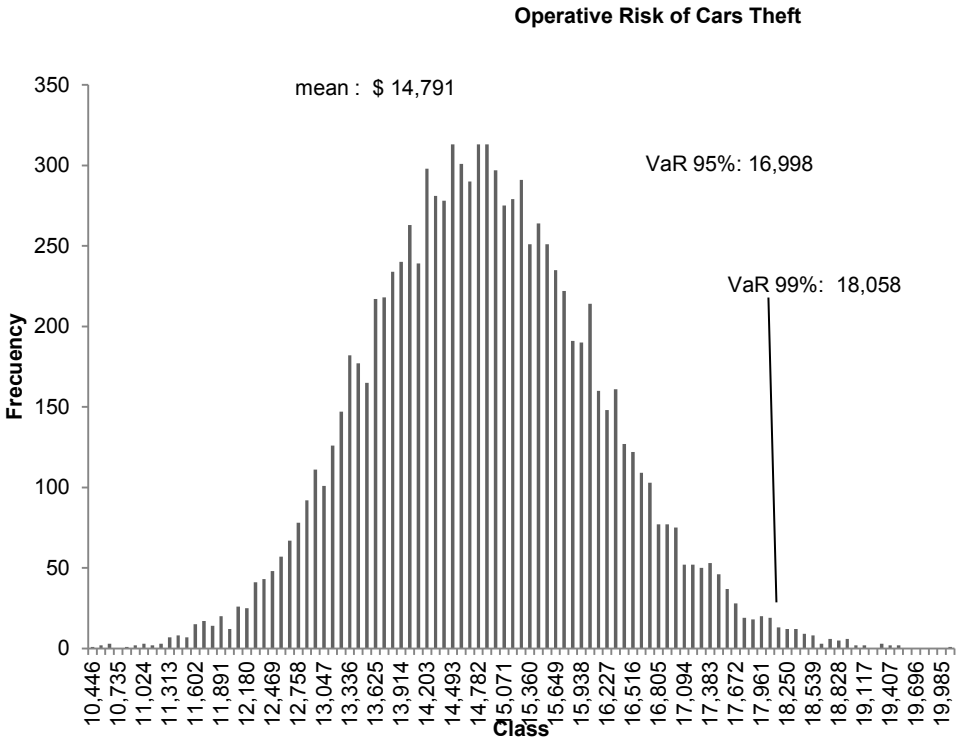
Estimating the Loss Distribution Aggregated (LDA)

To estimate loss for operational risk it is necessary to combine the discrete variables (frequency) with continuous variables (severity), so the aggregate loss is an uncertain variable with a nonlinear relation. This complicates loss estimates by analytical methods. However, the MS, being a simple and flexible analytical method, allows convolution of the distributions of thefts and losses to produce the aggregate loss distribution. The results were obtained using MS with data frequency and severity of theft simulated using the probability distribution. The results are show in Figure 1. The expected values for 10,000 iterations of the convolution between the frequency and severity distributions are reported using the NegBin-logisitic combination for each risk event.

After performing the MS we get a distribution of aggregate losses associated with car theft in Colombia by aggregating distributions of frequency and severity. The results are presented in Figure 3. As shown in the figure the average value of monthly losses total $14,791 million pesos ($8.2 million USD). The operational VaR at 95% and 99% is $16,998 and $18,058 millions pesos ($10 millions USD) respectively, These values should be covered by insurance companies through reinsurance or another means of coverage. The following Table 6 shows some statistical measures of the simulation. In general, standard deviation, Skewness and kurtosis of the aggregate loss distribution approaches a normal distribution.

The simulation gives a countrywide expected loss for the year 2011 of nearly $157,219 million pesos as shown in Table 7. This represents the theft of around 5,494 cars.

Figure 3: The Operative Risk of Cars Theft



This Figure shows the results of the 10.000 repetitions of the convolution between the frequency and severity distributions, taking NegBin-logisitic combination for each risk event.

Table 6: The Statistical Measures of the Simulation

Operative Risk of Car theft.	
Mean	14,791
tipic error	12.87
Median	14,753
Tipic Desviation	1,287
Variance	1,656,034
Curtosis	0.0976
Skewness	0.1609
Rang	9,635
Mín.	10,446
Max	20,081
Iterations	10,000
perc 90%	16,516
perc 95%	16,998
perc 99%	18,058

This table shows the main statistical measures of the simulation

Table 7: Countrywide Expected Loss for the Year 2011

Month	*Random Number*	*Thefts Expected*	*Random Number*	*Expected Loss*
January	0.29	452.54	0.86	15,051.16
February	0.29	451.89	0.04	9,446.14
March	0.51	475.68	0.86	15,019.41
April	0.19	440.09	0.68	13,830.55
May	0.91	531.27	0.10	10,401.19
June	0.04	408.49	0.92	15,668.24
July	0.29	452.38	0.23	11,479.12
August	0.50	475.12	0.54	13,117.57
September	0.76	504.16	0.09	10,342.79
October	0.06	413.68	0.55	13,178.87
November	0.64	489.73	0.59	13,355.24
December.	0.02	398.65	0.96	16,328.78
Accumulated		*5,493.67*		*157,219.04*

This table shows the simulation results for countrywide expected losses for the year 2011. The estimate is $ 157,219 million pesos, representing the theft of around 5,494 cars.

CONCLUSIONS

Methods to estimate the Operative Risk exist including MS, Extreme Value Theory, Bayesian Trees and Fuzzy Logic. These techniques are used depending upon the historical data of loss events. We used MS because we have historical data of car theft in Colombia from 2004 to 2010. To carry out the simulation; we adjust probability distribution function of frequency and severity of loss on the thefts that occurred. These adjustments allow us to use a Loss Distribution Aggregated (LDA) to estimate provision for expected losses. These estimates are necessary to plan for the specific period (2011). The historical data of frequency and severity of car theft is taken from FASECOLDA.

After performing the MS, we get an LDA associated with car theft in Colombia from aggregation frequency and severity. The probability distribution function aggregate is not a fat tailed distribution. It has parameters similar to normal distribution (Kurtosis and Skewness). The loss distribution has a low volatility (1,287 mills) and variation coefficient of 8.72%, suggesting losses are centered on the average. It is convenient to work with a 95% confidence level. The average value of monthly losses totaled $ 14,791 million. The simulation gives a countrywide expected loss for the year 2011 of nearly $ 157,219 million pesos (87.3 million USD), representing the theft of around 5,494 cars.

The works objectives were estimate economic expected losses for inclusion in pricing car theft insurance policies, as well as the estimate of unexpected losses “Value at Risk". Through this we can calculate the potential capital to absorption losses. The operational VaR at 95% and 99% is $ 16,998 and $ 18,058 million respectively. These values should be covered by insurance companies through reinsurance or another means of coverage. In general, Operational Risk for car theft is greater as the number of issued insurance policies increase and it is more likely to occur in the cities of Bogota and Medellin. The rest of the country also shows a rising trend with the passage time. As December approaches theft increases. To start a process of risk management firms should have a strategy approved by management. The principles should be to identify, measure, control, check and moderate operational risk. They should develop their own approach and method for risk management, according to geographical position, underwriting volume and complexity of operations. The system must consider all stages of risk management.

We suggest future research that studies city, car´s marking and color to set boundaries that allow development of different rates by city, car and color. This model can be run by city, region or department to identify the influence on successful financial companies and allow them to lower risk by increasing premiums, reinsurance, and abandonment of the business line in some cities. Alternatively firms might design insurance policies exclusively for high performing volume customers. In the same way, if the insurance company needs estimations of economic capital needs, we recommend applying statistical and mathematical techniques identified in this article using historical data to measure Operational Risk. Analysts should note the model obtained is not static. Rather it changes overtime because companies take actions to moderate risk and control plans. The main limit of the study was the lack of systematic data. The data in this study extends back only to 2004. In addition, insurance companies are just developing a culture for risk measurement because of difficulty obtaining reliable qualitative information. It is important that once risks are identified and quantified the insurance companies manage them through policies, procedures, systems and controls. Companies that have not yet started the process of risk management are isolate efforts and have a long way to go. The risk measurement methods recommended by Basel II are applicable to insurance markets, which behave in lineal way for the severity of the loss.

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Abbreviations

AMA Advanced Measurement Methods / Advanced Measurement Approaches
ANPR: Notice of Proposed Rulemaking / Advance Notice of Proposed Rulemaking

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THE ROLE OF THE FORENSIC ACCOUNTANT IN A MEDICARE FRAUD IDENTITY THEFT CASE

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ABSTRACT

Identity theft is a rampant problem in the United States. It occurs when one's personal information is stolen for the purpose of impersonating that person, making unauthorized purchases, taking money from bank accounts, opening new lines of credit with the stolen information, or using that information for other financial gain. According to a recent survey by the Javelin Strategy and Research Center, at least one in ten people have been the victim of identity theft. Forensic accountants and fraud specialists can help to prevent, detect and prosecute identity theft. This study examines a case of identity theft involving Medicare fraud. The role that the forensic accountant may play in the prosecution is discussed. The forensic accountant is important in these types of cases because the financial trail must be traced and will lead back to the criminal. The forensic accountant also has the important job of preparing the evidence exhibits for the prosecutors to use in court.

JEL: M40, M49

KEYWORDS: forensic accounting, Medicare fraud, identity theft

INTRODUCTION

Identity theft is a huge problem in the United States. Some estimates indicate that one in ten people have been the victim of identity theft. It occurs when one's personal information such as social security number, drivers license number, etc. is stolen for the purpose of impersonating that person, making unauthorized purchases, taking money from bank accounts, opening new lines of credit with the stolen information, or using the information for other financial gain. According to the nonprofit organization Identity Theft Resource Center (www.idtheftcenter.org), identity theft can include check fraud, credit card fraud, financial identity theft, criminal identity theft, governmental identity theft, and identity fraud. According to the Department of Justice, identity theft often relates to cyber intrusions, health care fraud, mortgage fraud, and credit card fraud, but it can also be a significant element of violent crimes such as domestic abuse and even terrorism (U.S. Department of Justice, 2010). The Identity Theft and Assumption Deterrence Act of 1998 strengthened the criminal laws governing identity theft and makes identity theft a federal crime.

In 2010, identity theft was the number one complaint to the U.S. Federal Trade Commission (FTC, 2011). To understand how to prevent identity theft, it is important to understand how identity theft occurs. This study will take a detailed look at a case involving a massive alleged identity theft fraud involving the U.S. Medicare system, one of the largest Medicare frauds to date. The fraud was allegedly conducted by an Armenian-American crime ring who used stolen doctor and patient identities. The stolen identities were used to file reimbursement requests to Medicare for procedures that were not performed. From 2006-2010, the crime ring allegedly submitted over $100 million in fraudulent bills to Medicare based on the stolen identities, and received over $35 million in reimbursements (Rothfeld, 2010).

The remainder of the paper is organized as follows. I first define identity theft and present several examples of identity theft. Then, I review the prior literature and discuss common Medicare frauds. Then the case of the $35M Medicare fraud is detailed. The role of the forensic accountant is then described. Finally, I discuss the implications of the paper, with conclusions and suggestions for future research.

Identity Theft

There are many forms of identity theft. Identity theft is when one party steals another person's personal information for the purpose of impersonating that person and or using that information for personal gain. Common instances of identity theft are cases when one's credit card or checking information is stolen and used by another person. This is extremely common today and in fact, even the Chairman of the Board of Governors of the Federal Reserve System has fallen victim to this type of identity theft! In 2009, twenty one people were charged with participating in a wide ranging identity theft ring. The members of this ring stole victim's identity through several different methods, including stealing mail and pick-pocketing. One of the many victims of this crime ring was Fed Chairman Ben Bernanke and his wife. His wife's handbag which contained a family checkbook, credit cards and identification was stolen from a Starbucks in Washington, D.C. A week later, the criminals then tried to deposit one of the Bernanke's checks for $900 into a fraudulent account (Markon and Irwin, 2009). Prosecutors estimate that this identity theft ring netted more than $1.2 million before they were arrested.

In 2008, the Boston U.S. Attorney's office announced that eleven people were indicted for stealing more than 40 million credit card and debit card numbers. The perpetuators hacked into the wireless computer networks of several retailers, including Marshalls, T. J. Maxx, BJ's Wholesale Club, OfficeMax, Barnes & Noble and Sports Authority to steal credit and debit card numbers, passwords and account information. Some of the credit and debit card numbers were sold on the internet. The others were used by the hackers to withdraw tens of thousands of dollars from ATMs. The U.S. Justice Department and the Secret Service conducted an undercover operation to bust this fraud ring for three years, leading to the indictment in 2008 (Verini, 2010).

An interesting and somewhat unique case of identity theft involved a conman faking his way into Harvard University. In May, 2010, a student at Harvard, Adam Wheeler, was charged with a string of cons including using a fake identity to gain admission to Harvard. He allegedly faked his College Board admissions exam scores, doctored his letters of recommendation, and forged transcripts from MIT and Phillips Academy. He was charged with using the work of other scholars to obtain thousands of dollars in scholarships and grants (Jan and Valencia, 2010). Wheeler pled guilty in 2011.

A type of identity theft that is becoming more common involves the U.S. Medicare system. The U.S. Medicare system was established by the Social Security Act of 1965, which was signed into law by President Lyndon B. Johnson. The purpose of Medicare is to provide health insurance benefits to senior citizens or those who are disabled. Under Part B of the Medicare Program, qualified individuals are provided with supplementary insurance benefits. Under this program, health care providers submit claims and Medicare pays a large percentage of the cost of the medical services provided to beneficiaries. The claims submitted by health care providers are often paid by Medicare quickly, often without verification that the services were actually provided. This has led to widespread abuse and fraud in the Medicare system. For example, in February 2011, a health care crime sweep charged 114 defendants with Medicare fraud involving attempts to defraud the U.S. government of more than $240 million (Schoofs et al., 2011). One of the defendants in this case recently pleaded guilty to five counts of health care fraud (U. S. Department of Justice Press Release, 2011). The Medicare Fraud Strike Force was founded in 2007 and since then has charged more than 1,000 defendants who have collectively falsely billed Medicare for more than $3.2 billion.

LITERATURE REVIEW

Although Medicare fraud is a massive problem in the United States, there has been relatively little academic research on this type of fraud. Some research has documented that ending fraud in Medicare and Medicaid is a very difficult, if not impossible, process and that safeguards in the system are not

adequate to protect the program (Welch, 2006). The Wall Street Journal recently reported that the New York state agency in charge of recovering money stolen from the state's $52 billion Medicaid program returned more money in fraud cases to Medicaid providers than it brought back to the state (Gershman, 2011). This indicates a very serious problem in resources available to combat this type of fraud.

Research in health care fraud detection has noted that current antifraud systems are not adequate and that a more wide array of statistical methods are needed and are currently being developed to assist with fraud detection (Li et al., 2008). This research notes that advantages of improved statistical methods would include automatic learning of fraud patterns from data, specification of fraud likelihood for each case so that suspicious cases can be prioritized, and identification of new types of fraud.

Other research has proposed models to identify fraud, waste and abuse in Medicare (Musal, 2010). These models could be used to flag health care providers. Edwards (2011) examines the use of stratified sampling and ratio estimation in Medicare and Medicaid benefit integrity investigations.

Prior research has examined the risks of medical identity theft associated with the use of Electronic Medical Records (Harrison and Ramanujan, 2011). The prevalence of medical identity theft has also been examined (e.g., Dreiling, 2007), showing that organized crime is often involved.

Some research has detailed ways to avoid identity theft (Procaccino et al., 2010). Medical identity theft is often difficult to detect, and can cost the U.S. government at least hundreds of millions of dollars each year in fake billings (Katz, 2007). Medical identity theft can be used to file false Medicare claims. The thieves can either file the false claims or sell the stolen identities to others who will file false claims. This can be extremely dangerous if someone's health record is altered and as a result, they receive incorrect treatment (Katz, 2007). One study showed that increased antifraud enforcement efforts may lead to lower Medicare billings without detriment to patients (Becker et al., 2005). Krause (2006) looks at the failure of the system to adequately compensate victims of health care fraud and recommends a patient centered model for fraud recovery.

Studies have examined the expansions of State Offices of Medicaid Inspector Generals and implications for Medicaid fraud enforcement (e.g., Wenik, 2010). Other studies have examined efforts to detect and prevent Medicaid program fraud and abuse (Fusto, 2008), including the creation of the Medicaid Integrity Program (MIP). The purpose of the MIP is to identify, recover, and prevent overpayments resulting from fraud, waste, and abuse in Medicaid. Data mining and information sharing among agencies is recommended.

A recent report by the GAO notes five key areas in reducing fraud, waste and abuse in the Medicare system: strengthening provider enrollment process and standards, improving pre-payment review of claims, focusing post-payment review of claims on most vulnerable areas, improving oversight of contractors, and developing a robust process for addressing identified vulnerabilities (King, 2010). This report estimates Medicare fraud, waste and abuse to total $24.1 billion for 2009. However, it is impossible to get a precise estimate of the dollar amount of fraud, because some fraud likely goes undetected.

Medicare fraud is a huge and growing problem. Some common Medicare frauds include the following: 1) paying kickbacks to patients and have patient say they receive services they do not need or do not get, 2) pay doctors to sign off on care that is not given, prescribe tests that are not necessary, or order medical equipment that patients do not need, 3) ambulance or medical transport companies recruit patients and bribe them to have transportation costs covered by Medicaid, 4) have doctors break down what should be a single charge into many separate charges to increase total reimbursement (Schoofs et al., 2011). One of the reasons that Medicare fraud is so widespread is that the system automatically pays the vast majority of bills it receives from companies that possess federally issued supplier numbers (Johnson, 2008). Below is

a description on one of the largest alleged Medicare frauds in history, involving several different types of fraud including identity theft.

THE CASE OF THE $35 MILLION MEDICARE FRAUD

In October 2010, the U.S. Attorney's office announced the unsealing of charges against 44 alleged members and associates of an Armenian-American organized crime enterprise. The accused were charged with operating at least 118 medical clinics located in 25 states, submitting over $100 million in fraudulent claims to Medicare and with operating a multimillion dollar scheme to defraud automobile insurance companies. In a press release, Manhattan U.S. Attorney said, "…this group of international gangsters allegedly ran a verifiable fraud franchise" (FBI Press Release, 2010). The charges include racketeering conspiracy and conspiracy to commit health care fraud, bank fraud, fraud in connection with identity theft, credit card fraud, money laundering, and immigration fraud, mail fraud, wire fraud, money laundering, and aggravated identity theft.

The case has not yet gone to trial. Below is a description of the alleged frauds. The information below was obtained from the indictments. It is important to note that the information in the following six paragraphs is a description of the charges, which are merely allegation. Those charged are presumed innocent unless proven guilty in a court of law.

According to the indictment, members of the organized crime enterprise are charged with operating an elaborate nationwide scheme in which Medicare was billed for over $100 million in fraudulent claims. It is alleged that dozens of "phantom clinics" – phony health care providers that existed only on paper – were created by stealing the identity of doctors. Identifying information such as the doctor's social security number, medical license number and date of birth were stolen. Then with that stolen information, the enterprise would incorporate a health care clinic without the knowledge of the doctor. An application would then be filed with Medicare, often using the address of an empty storefront or UPS Store. Bank accounts for the phony clinic were opened. Identities of legitimate Medicare recipients were stolen and used by the defendants to defraud Medicare. Bills were submitted to Medicare for services that were said to be provided (by a doctor whose identity was stolen) to patients (whose identities were stolen). No services were actually provided.

Medicare is set up to pay claims quickly. As such, many times Medicare paid large amounts of claims into the accounts created for the phony clinics. The money was then quickly transferred into other accounts, to untraceable locations, or withdrawn. In some cases, it is alleged that tens of thousands of dollars were hand carried to Armenia. The phony clinics would shut down after a few months each but the money was long gone by the time the clinic was detected. The indictment notes at least 118 phony clinics and at least $35.7 million in fraudulent Medicare payouts.

The fraud was detected because of the suspicious manner in which Medicare was billed, such as an ear, nose and throat doctor billing for pregnancy ultrasounds. Other suspicious billings included: an obstetrician billing for allergy skin tests, a dermatologist billing for heart tests, an ophthalmologist billing for tests of the bladder, a psychiatrist billing for MRIs of upper extremities, dermatologists billing for sleep studies, etc.

According to the indictment, members of the organized crime enterprise are also charged with operating a ten year, multimillion-dollar fraud scheme to defraud the no-fault insurance system in the New York area by submitting claims for treatments and medical equipment that were medically unnecessary or never even provided. The scheme involved both actual accident victims as well as the staging of accidents to recruit patients. In some cases, hospital employees were paid to provide the enterprise with confidential personal identifying information about actual accident victims so that the enterprise could recruit them to participate in the fraud.

Once victims were identified or created, the enterprise would use corrupt doctors who agreed to subject the patients to unnecessary medical exams and treatments in order to increase fraudulent billings for the scheme. Corrupt doctors were also paid to create medical professional corporations under which the fraudulent billings could be submitted.

Corrupt lawyers were also used in the scheme to help manipulate billings in order to attract less scrutiny from the insurance carriers. Lawyers were also used to coach the claimants on how to maximize the insurance claims. One attorney is charged with allowing fraud proceeds to be laundered through his escrow account.

ROLE OF THE FORENSIC ACCOUNTANT

Due in part to the sheer magnitude of the dollar amounts involved, it is likely that the prosecution is using a forensic accountant to calculate damages. For the Medicare fraud, a team of forensic accountants could possibly perform Computer Assisted Audit Techniques (CAATs) to search the Medicare databases for: suspicious billings such as the one noted above where an ear, nose and throat doctor billed for pregnancy ultrasounds, reimbursements made to P.O. boxes or UPS Stores or similar, dates on which one doctor performed many more procedures than would be possible to perform in one day, reimbursements made for treatments performed on a date subsequent to the Medicare recipient's death, requests for reimbursements for procedures performed after the doctor's death, etc. If either the physician or patient were not alive at the time of the service, this is obviously something that would warrant further investigation. These types of CAATs, along with other procedures, may help uncover the extent of the fraud.

Once the extent of the fraud has been determined, the forensic accountants would need to prepare the case for court. In the role of an expert witness at a trial, the forensic accountant has the difficult job of presenting often complex financial information in a way that is easily understandable to the judge and/or jury. Numerous charts and exhibits will likely be prepared for this case. Volumes of complex data will likely need to boiled down into understandable chunks of testimony.

A forensic accountant may also be used to track the funds that were deposited into the bank accounts of the phony clinics. The indictment alleges that the funds were sometimes transferred from one bank to the next before being withdrawn. The prosecutors will likely want to be able to "follow the money."

For the automobile insurance fraud, a team of forensic accountants may be used to calculate the amount of fraudulent billings. Then, the laundering of the proceeds would be of interest. Exhibits would likely be prepared for the courtroom including charts with dollar amounts and graphs, as well as timetables and charts showing the flow of the money.

CONCLUSION

The goal of this paper was to highlight the problem of identity theft and Medicare fraud, and to explain the role of the forensic accountant in the detection and prosecution of such frauds. One case of a large scale Medicare fraud was detailed. Identity theft, especially in the area of Medicare fraud, is a serious problem. Government is taking some steps to combat this type of fraud. For instance, in March 2011, Attorney General Eric Holder and Department of Health and Human Services Secretary Kathleen Sebelius participate in a regional health care fraud prevention summit. These summits are part of the Obama Administration's efforts to root out fraud, waste and corruption in the U.S. health care system (U.S. Department of Health and Human Services, 2011). The Department of Justice and the Department of Health and Human Services are working together through the Health Care Fraud Prevention and Enforcement Action Team (HEAT). As one part of HEAT's efforts, Medicare Fraud Strike Force operations have expanded from South Florida and Los Angeles to a total of nine health care fraud hot

spots including Houston, T.X.; Detroit, M.I.; Brooklyn, N.Y.; Baton Rouge, L.A..; Tampa, F.L.; Chicago, I.L.; and Dallas, T.X. (U.S. Department of Health and Human Services, 2011). However, government should take further steps to prevent, identify and combat this type of fraud. Forensic accountants can be of assistance in designing auditing tools to detect such fraud and also in prosecuting cases relating to this type of fraud.

Individuals bear some of the responsibility for preventing and detecting fraud as well. Some steps that individuals can take to prevent Medicare fraud are: Keeping your personal information such as social security number and Medicare number safe and secure. This information should only be given to doctors or other providers who are approved by Medicare, your State Health Insurance Assistance Program, or Social Security. Individuals can help spot fraud and abuse by looking out for the following: suppliers who offer you free equipment, suppliers who want you to use their doctors, anyone you don't know asking for your Medicare or Social Security Number, calls from companies you did not give your phone number to, and charges for products or services you did not get on your Medicare Summary Notice (Medicare, 2009). Anyone suspecting Medicare fraud can call the Inspector General's Hotline at 1-800-HHS-TIPS.

This paper is limited in that only one large case of Medicare identity fraud was examined in detail. There is a need for much more academic research in the area of identity theft and fraud. Some suggestions for future research include examining how to make government programs such as Medicare more resistant to fraud, how to train governmental employees on fraud prevention and detection, and analyzing whether more harsh penalties may deter potential fraudsters.

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ACCOUNTANT AND USER PERCEPTIONS OF FAIR VALUE ACCOUNTING: EVIDENCE FROM FIJI

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ABSTRACT

This paper through use of proxies for users and preparers of financial reports, finds the definition and understanding of 'fair value accounting', and identifies how it is measured (for shares and property investments) in Fiji. The paper also studies benefits and limitations of the concept, examines its impact on financial reporting roles, determines appropriate alternatives of this method and forecasts its prominence and endurance in Fiji. The paper concludes that users and preparers of financial reports have similar understanding of fair value accounting. Some measurement techniques identified were the use of active markets, independent valuers and referrals to cost. Some benefits identified were better disclosure and information that is more relevant. Proxies also identified limitations of the method in terms of costs of valuation, training and hiring of professionals, and the application of subjective judgment. The proxies predict prominence of fair value accounting in the long run.

JEL: M41

KEYWORDS: Fair value accounting, measurement techniques, valuation method

INTRODUCTION

The concept of fair value accounting (FVA) has emerged due to existing limitations of historical cost accounting, major corporate collapses and tremendous pressure from users of financial reports. As a result, the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) are moving away from historical cost accounting towards FVA. The world at large is affected by this move, in one way or another. Despite Fiji being such a small economy (in comparison to USA and Australia), FVA has found its way here as well. Therefore, it is essential to consider 'FVA' in Fiji's context.

Firstly, this study (using proxies for users and preparers of financial reports) explores the definition and understanding of 'FVA'. Secondly, it identifies how fair value is measured in an economy with a very small active market (for shares and property investments only). Thirdly, it ascertains the benefits and limitations associated with this accounting phenomenon. Next, it touches on the perceived roles of financial reports and the impact that FVA will have on these roles. Finally, the study considers alternatives of this method and forecasts the prominence and endurance of FVA.

LITERATURE REVIEW

The Australian Accounting Standards Board (AASB) Statement of Financial Accounting Standards (SFAS) 157 *Fair Value Measurements* defines fair value as the price that would be received to sell an asset or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. According to Herz (in Young, 2008), fair value is the price that one would get in a reasonable exchange between knowledgeable parties. The focus is on exit price and not the entry price.

However, Zacharski, Rosenblat, Wagner and Teufel (2007) specify that fair value includes market value but is not restricted to situations where current market quotations are available. Accounting standards discuss various ways of measuring fair value. The International Accounting Standard (IAS) 39 *Financial Instruments: Recognition and Measurement* requires an entity to use the most advantageous active market in measuring the fair value of a financial asset or liability when multiple markets exist, whereas IAS 41 *Agriculture* requires an entity to use the most relevant market.

Both IASB SFAS 157 and FASB SFAS 157, have been developed regarding FVA. These require an entity to use the principal market for the asset or liability. In absence of such, the entity uses the most advantageous market. A principal market is one in which the reporting entity would sell the asset or transfer the liability with the greatest volume and level of activity. The most advantageous market is one in which the reporting entity maximizes amount received for the asset or minimizes amount paid to transfer the liability, considering transaction costs.

Zacharski *et al.* (2007) note the FASB Statement identifies three valuation techniques: the market approach, income approach, and cost approach, requiring use of a given technique when sufficient data is available and where appropriate. Market approach uses observable prices and other relevant information generated by transactions involving identical or comparable assets. Income approach converts future amounts to a single present value amount. Cost approach is based on the amount that would be currently required to replace the service capacity of an asset. In some instances, there is use of a single technique, whereas in others, multiple valuation techniques may be appropriate.

They further explain the FASB Statement hierarchy, based on whether inputs are observable or unobservable. Observable inputs reflect assumptions used by market participants in pricing the asset or liability based on data obtained from sources independent of the reporting entity. Unobservable inputs reflect the reporting entity's own assumptions (developed based on best information available in the circumstances). The Statement instructs reporting entities to use fair value techniques that maximize observable inputs and minimize unobservable ones. The hierarchy determines the level of disclosure required in financial statements. The three levels, from highest to lowest priority, are as follows:

Level 1 inputs are quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at measurement date. Level 2 inputs are observable quoted prices in active markets for similar assets or liabilities; prices for identical or similar assets or liabilities in markets that are not active; directly observable market inputs for substantially the full term of the asset or liability such as interest rates and yield curves at commonly quoted intervals, volatilities, pre-payment speeds, default rates, and credit spreads; and market inputs that are not directly observable but are derived from or corroborated by observable market data. Level 3 inputs are unobservable inputs based on the reporting entity's own assumptions about the assumptions that a market participant would use. These assumptions are those that are reasonably available, without undue cost or effort on the part of the reporting entity.

According to White (2008), it is Level 3, which almost exclusively applies to Fiji. Literature identifies various benefits of FVA over historical cost. Edwards (1975) asserts that it is little comfort to know that the historic cost of every asset held by business firms has not changed since its acquisition. Yanez (in Young 2008) expresses that FVA is an evolution in financial reporting, which seeks to give users more timely and useful information. Barth (1994) notes that advocates of FVA believe it provides measures of assets, liabilities and earnings, which are more relevant.

Chisnall (2001) indicates that fair value is regarded as conceptually superior to historical cost values. It reflects open and competitive markets assessment of current economic conditions, showing all available information, up to the measurement date. Accounting on this basis will reduce anomalies in the existing mixed accounting approach. Ratcliffe (2007) explains the objective of new principles-based guidance is

to improve balance sheet management, clarity and consistency of financial reporting. This is achieved by eliminating incidents in which related assets and liabilities are measured differently.

Conversely, literature also identifies limitations of FVA. A byproduct of FVA, as discussed by Yanez (in Young 2008) is increased volatility. Due to subjective judgment, results derived will be questionable, and may lead to litigation. Rayman (2007) believes that FVA may be misleading or flawed. Botosan, Koonce, Ryan, Stone and Wahlen (2005) also considered research, which demonstrated that due to differences in interpretation of terms, if valuation information is seen as misleading, and taken to court, it would result in litigation costs.

Godfrey J, *et al.* (in White 2008) state the stewardship function is discharged through provision of a historical record, stressing the contractual relationship between the reporting entity and those who provide resources to it. A user seeking insights of this sort will have little use for FVA. In addition, FASB 159 *Fair Value Option for Financial Assets and Financial Liabilities* does not consider certain items. For example, assets and obligations associated with pension and other post-retirement benefit plans, financial assets and liabilities recognized under lease agreements, etc. This indicates FASB 159 may be incomplete. Such lack of guidance leads to inconsistencies in reporting practice.

According to White (2008), FVA applies to jurisdictions with active secondary markets for financial instruments. Therefore, it does not apply in Fiji. He also asserts the use of Level 3 inputs will not provide reliable financial reporting. Fiji simply does not have qualified valuers, thus there are cost issues (such as hiring expatriates). Furthermore, use of fair values will make financial reporting more complex and less readily understood.

Possibly, the analytical worth of FVA is not considered high enough to warrant the cost of producing it. Moreover, other advantages can only be realized if the method is widely practiced. According to Herz (in Young 2008), financial institutions now require more rigorous disclosures and thus, a greater number of assets are being carried at fair value. In Fiji, lead is taken from the IASB. Thus, regulations already permit (and often direct) reporting entities to employ fair values.

METHODOLOGY

Face to face and telephone interviews were conducted in 2008 to gather data for this study. Due to time constraints and difficulties in selecting specific users and preparers of financial reports, proxies were employed. Eight observations were made, four on the users and four on the preparers.

Table 1: Sample Used in the Study

Proxies for Users	**Designation of Interviewee**
1). Unit Trust of Fiji (UToF)	Fund Accountant
2). Kontiki Capital Limited	Manager Finance and Administration
3). South Pacific Stock Exchange (SPSE)	Management Accountant
4). Capital Markets Development Authority (CMDA)	Analyst Corporate Finance
Proxies for Preparers	
1). Ernst & Young	Audit Partner
2). G Lal & Co (PKF)	Audit Manager
3). Pricewaterhouse Coopers (PwC)	Audit Manager
4). KPMG	Audit Manager

This table shows proxies for the users and the preparers interviewed in the study.

FINDINGS AND DISCUSSION

Definition and Understanding of the term 'FVA'

When it comes to defining 'fair value', preparers interpret it as the 'market price or value', or simply as the 'price for which an item would be exchanged between a willing buyer and a willing seller'. This indicates the need for consensus between willing buyers and willing sellers, in order for fair value to be established. One of the preparers emphasized FVA to be the recording of assets and liabilities at values in an open market. In such a market, there would be willing buyers and willing sellers who have no restrictions (such as, cash, price or legal constraints). In other words, fair value is the value that one would get in an active market. This is a difficulty in Fiji, as only seventeen companies are listed on the stock exchange, and these companies engage in minimal trading.

The preparers view FVA to be a broad topic, where focus is not only on the definition of the term but also on measurement, presentation and disclosure of assets, liabilities and equity in financial statements. Preparers referred to the definition of fair value in the International Financial Reporting Standards (IFRS) and opted to adopt this.

Two of the users define fair value as the value at which an item could be bought or sold in a current transaction between willing parties. Another user viewed it to be an estimate of the price an entity would realize if it were to sell an asset, or a price it would pay to relieve a liability. Fair values are seen as rational and unbiased estimates of potential market prices of commodities, based on factors such as scarcity, utility, and risk.

Another user considered FVA to be about obtaining an estimate of market value of an asset (or liability) for which there is no established market. In other words, it is about how an economy like Fiji would determine the market prices of its assets and liabilities where there is no active market, except for shares and investment properties.

Fair Value Measurement

In Fiji, preparers decide what assets and liabilities are to be reported at fair values. They first refer to active markets to determine market values of financial assets. Reference is limited as SPSE is very small and caters for only seventeen listed companies. Moreover, there is no active market for assets and liabilities apart from property development and shares. Therefore, the amount of trading is very minimal and values obtained may not be representing the actual market values.

In absence of an active market, reference is made to market prices of identical assets and liabilities of its competitors or similar industries. Since this requires judgment, preparers have to be cautious deciding on what constitutes an appropriate identical asset or liability and which entity's price should be adopted for reporting. Since companies in Fiji do not face rigorous competition and they differ in terms of size and operations, it is quite difficult to make comparisons. To allow for use of fair values, the reporting entity would have to make the companies comparable by discounting selected values using some percentages. As a result, fair value derived would be subjective and unreliable.

An independent valuation would be the third option. Since Fiji does not have skilled people to provide valuations, expatriates would be needed. Multinational firms in Fiji may also prefer to use their own valuers who are located in other countries. However, this approach would be very costly.

The common approach is the use of valuation methods stated in IAS 39 and IFRS 7 *Financial Instruments: Disclosures*. Entities could use the future maintainable earnings method, which projects

future earnings by using discount rates to calculate value of the investment. This is used by companies that have been operating profitably for some time. A business which has just started or a business that has been making losses will use the net asset backing method, where entities will use their net assets to calculate fair values. The entities could also use other methods, such as discounted cash flows or dividend earnings method.

In absence of effective markets, one could also look at future cash flows. It is difficult to obtain reliable cash flow projections due to difficulty in predicting the economic and political stability in Fiji. The Reserve Bank of Fiji (RBF) takes quite some time in releasing interest and inflation rates. Due to this delay, entities are then required to predict and use their own discount rates. Thus, fair values are based on judgments or projections and therefore, are quite subjective in nature. It then becomes difficult to rely on assumptions that have been used to determine fair values based on future cash flows or discounted cash flow methods.

In the absence of an active market or in the case where minimal trading takes place, an entity has the last resort to record its assets at cost, which is presumed to be the fair value. Statutory and private entities assume that costs are market values for investments that do not have any listed or exchange values. According to preparers, many entities have adopted this approach in Fiji.

When asked for their preference of FVA, historical cost or 'hybrid' method, preparers responded by referring to the reporting distinction between small and medium entities (SME's) and large entities in Fiji. Fiji has a hybrid system of reporting, which includes a combination of historical cost and FVA. Each entity has its own variation of the hybrid system. Hence, they account for assets and liabilities differently.

Currently, a SME is not required to report under IFRS. Therefore, in most cases, their assets are recorded at historical cost. If SME's do opt to adopt IFRS, then they could use the 'deemed cost option' in which entities could record their assets at deemed values at the beginning of the year and depreciate these assets at its deemed cost. SME is which have investments in other entities, such as shares, can classify these in different categories (specified in IAS 39) and use fair values where applicable.

Preparers are holding consultations with their clients and advising them on the merits of adopting FVA. This indicates that accounting firms want their clients to use FVA for financial reporting purposes. It benefits accounting firms in terms of higher fees (consultation, advisory and audit) and concurrently benefits users by providing more relevant information.

However, it was noted that preparers are hesitant to report financial liabilities using FVA. They prefer to record these at contractual amounts due to lack of guidance and support from financiers. Furthermore, it is believed that users will not be able to comprehend values being reported or understand how it was derived. Additionally, if entities adopt the concept of recording financial liabilities at fair values and paying these liabilities at its contractual amounts on maturity dates, the financial reports would be perceived to be misleading.

Some preparers suggest that FVA should be industry based. That is, FVA should only be used by financial services, property and plant, manufacturing companies, real estate and insurance companies. It can also be used according to nature of business, type of ownership and type of users. However, a preparer added that if a rule applies, it has to apply generally. Comparisons will not be possible if entities start to pick and choose. If assets are disclosed at two different measurement bases within one industry, the purpose of IFRS, to achieve comparability is defeated.

Users preferred to employ the hybrid system of reporting, in order to ensure a balance between reliability and relevance of information in financial reports. According to them, all items that must be reported at

fair value should be done so, while other items can be reported at historical cost. Users also stated that full adoption of FVA will not be appropriate for small businesses, due to cost factors. Therefore, they believe that small businesses should be given the option of using either fair value or historical cost, and use fair value only in instances where users would benefit. Large entities, on the other hand, should use FVA and not be given any exceptions.

Given a list of assets and liabilities, users selected those they would like to see being reported at fair values (Table 1). It can be observed that items such property, plant and equipment, investment properties, intangible assets, financial assets, biological assets, inventories, cash and cash equivalents, provisions, financial liabilities, DTA and DTL and minority interests are some elements that users want to see being reported at fair values. One user stated that all items in the balance sheet should in fact be reported at fair values. It will let users know what the elements are worth today rather than being misled through historical figures.

Table 2: List of Assets and Liabilities

Item:	User 1	User 2	User 3	User 4
Property, plant and equipment	√	√	√	√
Investment property	√	√	√	√
Intangible assets	√	√		√
Financial assets		√	√	√
Investments accounted for using the equity method		√	√	√
Biological assets		√		√
Inventories		√		√
Trade and other receivables				√
Cash and cash equivalents		√		√
Trade and other payables			√	√
Provisions		√		√
Financial liabilities			√	√
Deferred tax liabilities (DTL) and deferred tax assets (DTA)	√			√
Minority interest		√		√
Issued capital and reserves attributable to equity holders of the parent				√

This table shows the responses provided by users. The ticked items are elements the users would like to see being reported at fair values.

Benefits of Using FVA

Preparers stated that users are consulted in the standard setting process, that is, before exposure drafts are issued. Therefore, since users of the financial reports are driving the changes in standards, it should benefit them the most. In particular, reference was made to shareholders and potential investors.

Fair value enables shareholders to know the value of their assets (shares) based on the current market prices and enables calculation of future estimates in an entity's current financial report (as opposed to historical cost). It also enables them to make an assessment of what the proceeds from disposal would be, if their assets were disposed of in an orderly fashion. Using fair value also ensures industry-wide and cross-country comparison of financial statements and enables timely feedback. In regards to prospective investors, they will have better understanding of what the value of an entity is, and this will help them assess their potential returns.

IFRS 7 requires entities to disclose fair value of some assets that are recorded at historical cost in the balance sheet. This benefits all users in their search for more useful information to make better decisions, that is, having financial gains rather than losses. This is especially so if the entities operate in shares and property investment markets.

One of the users explained that benefits will depend on the type of entity, what the user wants and their level of understanding. The interviewee stated that if users do not understand the concept of FVA,

financial reports produced will not be of any benefit to them. According to users, the shareholders, financiers and regulatory bodies will benefit.

Under FVA, financiers will be given an opportunity to monitor the level of profit growth, as well as capital growth. FVA requires revaluation of assets, leading to changes in capital values and hence affecting growth. All financial institutions in Fiji come under the scrutiny of RBF. Fair value reporting will help them in determining the level of investments and growth in the economy. RBF places prudential requirements on financial institutions. As such, if these entities maintain their investments at cost, RBF will not know the worth of their investments and also will not be able to assess whether the entities are adequately covered.

The major benefit of FVA is that it provides useful and relevant information for decision-making. Financial statements will show the market value of the business, and as such, despite a decrease in reliability, it will rank high in terms of relevance. It is felt that regardless of this tradeoff, the qualitative factor of relevance will surely assist users.

Limitations of FVA

According to the preparers, the major limitation associated with FVA in Fiji is the issue of costs. This is in terms of getting expatriates and specialists to perform valuations and prepare reports. For example, insurance companies (which require actuaries) will have to hire expatriates since Fiji does not have such specialists. Also, the need for training or hiring knowledgeable and qualified professionals will increase costs. The accounting firms will have to provide consultation services to help their clients understand FVA. In contrast, a preparer argues that cost does not seem to be a major limitation as IAS 36 *Impairment of Assets* already required the entities to do an impairment test. Therefore, in some way or the other, entities are exposed to these costs.

Entities which have greater levels of assets and liabilities tend to incur higher costs. The additional costs hinder full compliance with FVA. For example, it is approximated that The University of the South Pacific (USP) will have to spend around $6 million in valuing its assets. This is a huge sum to expend on valuations alone. Thus USP is not in favor of this, and may fail to comply in totality. A preparer suggests that FVA should be mandatory for some organizations in particular, by looking at factors such as size, nature of business, users of the entities financial reports, and so forth. In this way, many small organizations will be saved from the cost burden.

In addition, there are practical difficulties, particularly in a small country like Fiji, where only seventeen companies (with minimal trading activities) are listed on the SPSE. Entities may not be able to comply fully with fair value reporting due to the absence of an active market. Furthermore, Fiji has a very vulnerable and changing economy. Due to the economic and political situation, specialists are quite reluctant to provide valuations.

FVA has also been criticized for being subject to managerial discretion and for not having properly defined valuation methods. This allows preparers to use their judgments in determining the factors or elements being used in the valuation models, and therefore, making it subjective. Valuers will have differing opinions on factors involved in these models. For example, deciding on appropriate discount rates. This could lead to under-or over-valuation of assets, leading to preparation of misleading reports. This could potentially result in litigation costs, if taken to court. Thus, financial reports will have to be thoroughly verified, before being made accessible to users. This will affect timeliness in reporting.

The choice between historical cost and FVA results in a tradeoff between reliability and relevance of financial information. Since these qualities are mutually exclusive, increasing relevance of information

compromises its reliability and vice versa. This creates a problem if reported information does not "provide useful information to financial statement users in making economic decisions" (IASB, 2008).

Users also expressed their concerns in regards to increased costs involved in adopting FVA. Also, most businesses in Fiji are family owned or private companies. In such cases, fair value reporting may not be relevant, as it does not bring in incremental revenues. Since many organizations in Fiji are small, it may be impractical and a cost burden for them to comply with FVA.

In addition, users also believe that valuation techniques adopted by entities in Fiji may not provide them with reliable information, even though it may provide relevant information to some extent. Reliability of fair values are questionable, as this information is subjective. Intentional or unintentional management biasness may result in inappropriate measurement and misstatements in earnings and equity capital. Even when valuations are done and reports are disseminated to users, there will be volatility in earnings.

There will also be problems in terms of understandability. If users are not familiar with FVA, how it is measured and the reasons for applying this concept, then eventually such reporting will be of little or of no value to them. Users will have to educate and familiarize themselves with FVA, to gain better understanding of financial reports.

Perceived Role of Financial Reports

Users uphold that financial reporting has a decision-making role. Relevant information will guide users in making informed and transparent decisions. Some users added that financial reporting also fulfills stewardship, accountability, transparency and comparability roles. Financial reporting provides a record of how funds and resources, contributed by the users, have been utilized by the entity. Comparability is achieved when users evaluate details within financial reports, and compare these across businesses of similar nature.

According to users, generally, FVA fulfils stewardship, decision making and valuation roles. It fulfills the stewardship role by making directors answerable to shareholders. It also fulfills the decision making role as shareholders will be able to make decisions, such as, whether they should continue their shareholding, realize or sell the shares based upon the realization or disposal proceeds.

However, one user believes that reporting under FVA will fulfill roles depending on the nature of business and users of its financial reports. He states that for private companies, FVA will not be useful since directors, shareholders and preparers are basically family members who have access to all information. As such, FVA will not produce any new information, but only contributes to increasing costs. However, for a public company, FVA will fulfill the role of decision-making and stewardship.

In addition, firms through use valuation models will be able to take into account relevant data, such as current economic forecasts and general market conditions to measure fair value. Hence, FVA fulfills the valuation role as well.

Prominence and Endurance of FVA

Both preparers and users agree that FVA will gain prominence and in future, will remain as part of the accounting standards. One preparer stated that although historical cost has served well, it has many limitations, particularly regarding valuation of assets. Recording of liabilities are fine under both historical cost and fair value methods, since they are stated at their contractual amounts. Assets, however, are held for longer periods of time and their values are quite volatile. Thus, there is hope that fair value will hold ground and replace historical cost.

Even though reliability is compromised when it comes to projecting risks, the use of chartered accountants and other professionals will be able to deal with the limitations of FVA. Eventually, the boards of companies may develop competencies in reviewing methods used to arrive at fair values. Valuation techniques could be revisited and reviewed. In this manner, confidence in FVA will increase and so will the demand for reporting under this method.

FVA has been present in the accounting standards for quite some time now. For example, impairment testing is not a new concept. There are possibilities that FVA guidelines may change slightly but it will definitely remain in future. IFRS's require FVA. Therefore, as more entities start adopting IFRS's, the market for FVA will expand and in this manner, it will gain prominence and survive in future.

Alternatives for FVA

From the interviews, it was noted that currently there are no alternatives for FVA. Since Fiji does not have resources to produce its own standards, there is not much choice but to rely on international standards.

However, the Fiji Institute of Accountants (FIA) has tried to seek provisions. That is, if there are practical difficulties associated in determining accurate fair values, entities are allowed resort to historical cost measures. For example, if entities do not have skilled staff or insufficient funds to hire experts, they could report assets and liabilities at historical cost.

CONCLUSION

Thus, this paper sought to find the definition and understanding of FVA and identify how it is measured (for shares and property investments) in Fiji. It also studied various benefits and limitations of the concept, examined its impact on financial reporting roles, determined appropriate alternatives of this method and forecasted its prominence and endurance in Fiji. Such information was gathered via interviews with four proxies for users and with four proxies for preparers of financial reports.

It was evident that preparers and users have similar understanding of FVA. Both agree that financial reports should be in line with either historical cost or FVA, depending on size, nature and users of financial reports. However, where one sees the need for relevant information, there is preference of FVA over historical cost accounting. Users perceive the roles of financial reports as being mostly for decision-making and stewardship purposes. They want entities in Fiji to report as many of their assets and liabilities at fair values, in order to prevent being misled like Enron's users'.

Due to time and resource constraints, this paper is based on views of eight interviewees (four each of users and preparers). This may not be a true representation of views of preparers and users Fiji-wide. To be fully conclusive, further research is needed using a greater sample size.

However, it may be agreed that FVA has its pros and cons. It will tend to provide more disclosures than what is generally provided under historical cost accounting. There will be limitations in terms of understandability, cost, reliability of information, volatility in earnings and timeliness. There are many valuation techniques being used, indicating that FVA has technical and practical difficulties in a small economy like Fiji. It has yet to develop the most appropriate and suitable way of determining fair values.

It is recommended that accounting bodies (such as FIA) create awareness, provide training and guidance to preparers. Entities should be given opportunity to resort to historical cost where they foresee practical difficulties in obtaining fair values. At this stage, differential reporting is preferred, with full compliance of FVA further in the future. Currently, no one sees any alternatives for FVA and many believe that with

daily modifications being done, FVA will survive. Therefore, it seems that even a country like Fiji is willing to adapt FVA, regardless of its limitations. This is for the benefit of users and to fall in line with other countries, in order to achieve harmonization in reporting.

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THE BEHAVIORAL ASPECT OF MERGERS AND ACQUISITIONS: A CASE STUDY FROM INDIA

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ABSTRACT

In the turbulent global economy, mergers and acquisitions of industries takes place to protect Indian businesses. Such mergers and acquisitions are taking place in Heavy Industries and in major service industries. This paper investigates the context, process and consequences of the merger of State Bank of Indore with the largest nationalized banking firm, State Bank of India. Due to inadequate emphasis on the human resource aspect, employee resistance acted as impediment to merger of these two banks and delayed the process. This paper develops a model, which can help the industry achieve smooth changes without employee resistance.

JEL: G34; C38

KEY WORDS: Turbulent global economy, Mergers and Acquisitions, Impediment to merger

INTRODUCTION

Mergers and acquisitions had a significant impact on the banking industry in India and around the world, in the global regime. As a result, many bank employees have experienced numerous psychological effects of mergers and acquisition (M&A). Acquisitions often have negative impacts on employee's behavior, resulting in counterproductive practices, absenteeism, low morale and job dissatisfaction. During the last few years, few acquisitions took place. Recent important mergers and acquisitions in India include the merger between IDBI (Industrial Development bank of India) and its own subsidiary IDBI Bank. The deal was worth $ 174.6 million (Rs. 7.6 -13824 in Indian currency). Another important merger was between HDFC and Centurion Bank and Bank of Punjab worth $82.1 million (Rs. 3.6 billion in Indian currency). This merger led to the creation of the Centurion Bank of Punjab with 235 branches in different regions of India. ICICI bank took over Bank of Rajasthan for $ 325 million. State Bank of India took over State Bank of Indore. The State Bank of India itself has huge international network, including, global operations contributing to 14 percent to the top line.

Indian companies have started the acquisition of industries in the international market. Wipro and Infosys in the IT sector, L.N.Mittal took over Arcelor, Tata Steel took over Corus and Vodafone took over Hutch. The purpose of mergers and acquisitions are procurement of supplies, to safeguard sources raw materials, and to obtain economies of scale. Market expansion strategy works to eliminate competition and protect existing markets, diversify products, strategic control of patents and copyrights. Financial strength through improve liquidity allows direct access to cash resources, enhances gearing capacity, borrowing on better strength, greater asset backing and improved EPS. Various laws govern mergers and acquisitions in India. They are Companies Act, 1956; Industrial (Development and Regulation) Act, 1951; Monopolies and Restrictive Trade Practices Act, 1969; Competition Act, 2002; Foreign Exchange Management Act, 1999; Sick Industrial Companies (Special provisions) Act, 1961; Income Tax Act, 1961; Securities Contract (Regulation) Act, 1956; Securities and Exchange Board of India Act, 1992; SEBI (Substantial Acquisition of shares and Takeovers) Regulations, 1997.

The impact of the M&A processes on the employees is similar irrespective of the geography and location of these mergers activity. In India, the effect and defects of the merger process have been experienced. One example is the joint venture between Proctor and Gamble and Godrej which collapsed due to the lack of HR synergies in the two organizations. When Sify's e-business division was merged with Satyam, the merger created technical confusion, which because of differing employee views on issues related to technology integration and development practices. The Grasim and L and T merger also threw up interesting HR issues.

In this paper, the authors examine the effects of merger and acquisitions on the morale and psychology of employees in the State Bank of Indore. It identifies the different stages of mergers and acquisition and the problems arising out of the exercise. Through factor analysis, the researchers identify the most important factors, which encouraged the employees to accept the merger without resistance. In this study, Section 2 briefly discusses the relevant literature. Section 3 refers to the data selection, research methodology and empirical models. Section 4 provides analysis and interpretations of the empirical findings and Section 5 presents the conclusion.

LITERATURE REVIEW

Weston and Mansingka studied the pre and post-merger performance of conglomerate firms, and found that their earnings rates significantly underperformed those in the control sample group. But, after 10 years, there were no significant differences observed in performance between the two groups. The improvement in earnings performance of the conglomerate firms was evidence for successful achievement of defensive diversification. Cornett and Tehranian (1992) and Spindit and Tarhan (1992) provided evidence for increases in post-merger operating performance. However, the studies of Berger and Humphrey (1992), Pilaf (1996) and Berger (1997) do not find any evidence on improvements in post-merger operating performance. Berger and Humphrey (1994) reported that most studies that examine pre-merger and post-merger financial ratios found no impact on operating cost and profit ratios.

The reasons for the mixed evidence are the lag between completion of the merger process and realization of benefits of mergers, selection of sample and the methods adopted in financing the mergers. Further, financial ratios may be misleading indicators of performance because they do not control for product mix or input prices. According to Karim and Bansal, (2008) merger and acquisitions help the firm acquire valuable capabilities possessed by the acquired organizations. Basant (2000) suggests that economic reform in the Indian economy has significantly reduced micro-economic rigidities and enhanced competitive pressures. In response, firms have undertaken corporate restructuring activity in order to retain competitiveness and increase their value. Beena (2004) finds evidence of mergers within the same group with the motive of consolidation of control to protect against takeovers but does not find any role of efficiency-related parameters in determining merger activity in India. The author instead suggests a merger motive of growth in size by acquiring higher equity.

Andrade and Stafford (2004) determine motivating factors for mergers both at industry and firm levels. The authors investigate the economic role of mergers in the US by performing a comparative study of mergers and other forms of corporate investment at both industry and firm levels. They find that industry capacity utilization has the opposite effects on merger and non-merger investments particularly during the 1970s and 1980s. While excess capacity drove industry consolidation through mergers, peak capacity utilization induced industry expansion through non-merger investment.

Maquieira, Megginson, and Nail (1998) examine 260 mergers in the US. They find significant net synergistic gains in non-conglomerate mergers and insignificant net gains in conglomerate mergers. Rhodes-Kropf, Robinson and Vishwanathan (2004) argue merger waves occur when the aggregate industry market valuation, measured as market to book value ratio, is high compared to estimates of true

valuations. The authors note that these valuations could be both due to misplacements and actual presence of growth opportunities. Both Ducker's and Koontz's arguments naturally emphasized the issues and problems which were common across different types of firms, since their aim was to help all managers improve their skills and the performance of their businesses (Goold and Luchs, 1993). Merger and Acquisition literature suggests that managers have various motives for mergers (Trautwein 1990). The form of these motives can be from purely financial to personal. In addition, there exists the traditional cost of efficiency theory based on the notion of economies of scale and scope, as well as the resource – based on enhanced utilization of core competences resources (Prahalad and Hamel 1990)

DATA AND METHODOLOGY

The data for this research has been collected both from primary and secondary sources. Primary data were collected through a survey of 58 employees of State Bank of Indore in different branches in Kolkata, West Bengal, India. The questionnaire includes twenty close-ended questions where the respondents have given their view against the scale of one to five where one was strongly disagree, two was disagree, three was somewhat agree, four was agree and five was strongly agree. Secondary data were collected from the published data, and the report of State Bank of India. Different books, journals official statistics, reports, articles, publications and other documents, and electronic data were also used. The collected data were analyzed using different statistical tools like percentage, KMO test, and Bartlett's test for doing the factor analysis in the study. The Union Government approved the acquisition of the State Bank of Indore by the State Bank of India through amendments in the State Bank of India (Subsidiary Banks) Act, 1959.

Following the acquisition, all branches of the State Bank of Indore came under control of State Bank of India branches in the respective states thereby saving substantial administrative cost. The acquisition helped in spreading the credit risk of the State Bank of Indore as the concentration risk to which the bank was exposed. Keeping in view the growing economy, State Bank of Indore required larger equity capital to support a growing balance sheet. State Bank of India raised equity capital, and State Bank of Indore did not exist effective August 26, 2010. The Merger was expected to avoid competition between the two entities and lead to easy access to funds at competitive rates in the banking sector. Customers, including depositors of the State Bank of Indore were able to operate their accounts as customers of State Bank of India effective the same date. Trade union leaders of State Bank of Indore protested the merger of State Bank of Indore with State Bank of India highlighting the loss of benefits in terms of housing loans, car loans, personal loans etc. However, with the passage of time, the union lost its significance and the issues of employee benefits in post merger period are currently under discussion. Since mergers and acquisitions are regular in Indian industries, the researchers have developed a model for smooth transition of business arising out of this exercise.

The Model

As the purpose of this paper is to show and explain the use of factor analysis in decision making of merger and acquisition, theoretical aspects of merger and acquisition are discussed from a practical, applied perspective.

The underlying assumption of factor analysis is, all variables within a particular group are highly correlated among themselves but have relatively small correlations with variables in a different group.
An orthogonal factor model with 'n' common factors is represented as:

$$\underset{(p\times 1)}{X} = \underset{(p\times 1)}{\mu} + \underset{(p\times n)}{L}\ \underset{(n\times 1)}{F} + \underset{(p\times 1)}{\varepsilon}$$

Where X is the observed random factor, with p components, has mean μ and covariance matrix $\sum$. The factor model X is linearly dependent upon a few numbers of observable random variables F_1, F_2, F_3,**.....** F_n, called common factors and p additional sources of variation $\varepsilon_1, \varepsilon_2, \varepsilon_3, \ldots\ldots, \varepsilon_n$, called error.

In practical, the factor model can be written as:

$$X_1 = \mu_1 + l_{11}F_1 + l_{12}F_2 + \ldots\ldots\ldots + l_{1n}F_n + \varepsilon_1$$
$$X_2 = \mu_2 + l_{21}F_1 + l_{22}F_2 + \ldots\ldots\ldots + l_{2n}F_n + \varepsilon_2$$

$$X_n = \mu_n + l_{n1}F_1 + l_{n2}F_2 + \ldots\ldots\ldots + l_{nn}F_n + \varepsilon_n$$

The coefficient l_{ij} is the loading of the i-th variable on the j-th factor, so the matrix **L** is the matrix of factor loadings. We apply the concept of principal component and the varimax procedures to get an appropriate result of factor analysis. The principal component factor analysis of the sample covariance matrix is specified in terms of eigenvalue-eigenvector pairs. In principal component analysis, it is assumed that the communalities are initially 1. In other words, principal component analysis assumes that the total variance of the variables can be accounted for by means of its components (or factors), and hence that there is no error variance. The extraction of principal components or factors in principal component analysis takes place by calculating the eigenvalues of the matrix. The number of positive eigenvalues determines the number of dimensions needed to represent a set of scores without any loss of information.

Hence, the number of positive eigenvalues determines the number of factors/components to be extracted. The construction of the factor itself is then calculated via a transformation matrix that is determined by the eigenvectors of the eigenvalues. After constructing the factors, it is possible to determine the factor loadings simply by calculating the correlations between the original variables and the newly obtained factors or components. It is furthermore always important to check the communalities after factor extraction. If the communalities are low, the extracted factors account for only a little part of the variance, and more factors might be retained in order to provide a better account of the variance.

A convenient way to check whether the sample is big enough or not to apply a factor analysis we used Kaiser-Meyer-Olkin measure of sampling adequacy (KMO-test). The sample is adequate if the value of KMO is greater than 0.5. In factor analysis the variables have to be inter correlated, but they should not correlate too highly (extreme multi-co linearity and singularity) as this would cause difficulties in determining the unique contribution of the variables to a factor. The inter-correlation can be checked by using Bartlett's test of spherity, which "tests the null hypothesis that the original correlation matrix is an identity matrix" .This test has to be significant: when the correlation Matrix is an identity matrix; there would be no correlations between the variables. If the determinant is greater than 0.05, then there is no multi-co linearity.

EMPIRICAL RESULTS

The first factor consists mainly of degrees of awareness for future growth and prospects of an employee after the merger and acquisition. The second factor consists mainly of degrees of uncertainty of an employee after the merger and acquisition. The third factor consists mainly of degrees of future growth of the industry after the merger and acquisition. The fourth factor consist Degree of personal problem of an employee after mergers and acquisitions.

Based on Primary Data on the State Bank of Indore

In Table 1, the first column represents the attributes that is taken into consideration. The second column represents the mean value of each of the attributes. The third column represents the standard deviation of each of the attributes and the fourth column represents the total number of observations. The rows indicate the mean, standard deviation and total number of attributes for each of the attributes.

Table 1: Summary Statistics

	Mean	Std. Deviation	Total no of Observation
Uncertainty of job after acquisition	2.8966	1.6080	58
Loss of identity	2.6207	1.1821	58
New leadership style	2.5345	1.0297	58
New rules and regulations	2.9310	1.0900	58
New appraisal methods	2.5690	1.3906	58
Change of hierarchy	3.0000	1.3112	58
Prestige. power and status	4.3621	1.2240	58
Work culture	2.7241	.9137	58
Transfer fear	2.2414	1.4786	58
Loss of self Actualization	2.0517	1.0161	58
Poor Employee involvement in decision making process	3.2931	.9553	58
Increased work pressure after acquisition	3.4138	1.1087	58
Bank can compete with global banks	3.3448	1.5050	58
Improved service quality	3.6034	1.2131	58
Complicated Process of service	3.9310	1.3874	58
HR's role in acquisition	2.4483	.9764	58
Employee Consultation	2.2931	1.2843	58
Future benefit	4.1552	1.2255	58
Benefit in terms of present pay structure	2.2241	1.4515	58
Restructuring of key positions	1.7586	1.0141	58

Descriptive Statistics: In this table mean and standard deviation is examined of the 58 number of respondents against each of the factors.

In Table 2 the first column of the first row represents the Kaiser-Meyer-Olkin measure of sampling adequacy and the third column of the first row represents the value for the same. The value is more than 0.5, which means the sample size is big enough to do factor analysis. The second row of the first column represents the Bartlett's Test of Sphericity. The third column of the second row represents the approximate Chi-square value, third column of the third row represents the degree of freedom value and the third column of the forth row represent the significance level.

Table2: Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.620**
Bartlett's Test of Sphericity	Approx. Chi-Square	494.268
	df	190
	Sig.	.000

KMO and Bartlett's Test: A convenient way to check whether the sample is big enough or not to apply a factor analysis we used Kaiser-Meyer-Olkin measure of sampling adequacy (KMO-test). The sample is adequate if the value of KMO is greater than 0.5.

In Table 3 the rows indicate the various components taken care of to examine the factor analysis of the study. Twenty components under various factors are examined. The first column denotes the total weight of each component if there is only one component. If there are only component called Uncertainty of job after acquisition the total weight would have been 1, and respectively the values given in the table. The second column denotes in presence of all the components the weight of each component individually.

In Table 4 the first column represents the components or factors which will relate with the attributes taken for the factor analysis. In the second column the total value is indicated which is derived from the analysis. The second column is broadly classified into three sub columns. The first sub column under the

second column represents the total value observed. The second sub column represents the % of variance and the third sub column represents the cumulative percentage of the variance of the attributes. The second main column represents the sum square of the value extracted. The third column is divided into three sub columns. The first sub column under the third main column represents the total sum of squares.

Table 3: Communalities

	Initial	Extraction
Uncertainty of job after acquisition	1.000	.625
Loss of identity	1.000	.649
New leadership style	1.000	.848
New rules and regulations	1.000	.692
New appraisal methods	1.000	.439
Change of hierarchy	1.000	.745
Prestige. power and status	1.000	.798
Work culture	1.000	.591
Transfer fear	1.000	.838
Loss of self Actualization	1.000	.784
Poor Employee involvement in decision making process	1.000	.797
Increased work pressure after acquisition	1.000	.755
Bank can compete with global banks	1.000	.675
Improved service quality	1.000	.806
Complicated Process of service	1.000	.830
HR's role in acquisition	1.000	.614
Employee Consultation	1.000	.723
Future benefit	1.000	.740
Benefit in terms of present pay structure	1.000	.590
Restructuring of key positions	1.000	.771

Extraction Method: Principal Component Analysis The principal component factor analysis of the sample covariance matrix is specified in terms of eigenvalue-eigenvector pairs. In principal component analysis, it is assumed that the communalities are initially 1. In other words, principal component analysis assumes that the total variance of the variables can be accounted for by means of its components (or factors), and hence that there is no error variance.

Table 4: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Components/ Factors	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.468	27.342	27.342	5.468	27.342	27.342
2	1.932	9.660	37.002	1.932	9.660	37.002
3	1.853	9.265	46.267	1.853	9.265	46.267
4	1.550	7.752	54.020	1.550	7.752	54.020
5	1.345	6.727	60.746	1.345	6.727	60.746
6	1.110	5.550	66.296	1.110	5.550	66.296
7	1.054	5.271	71.567	1.054	5.271	71.567
8	.941	4.707	76.274			
9	.811	4.053	80.327			
10	.745	3.725	84.052			
11	.607	3.037	87.088			
12	.549	2.747	89.836			
13	.493	2.466	92.302			
14	.396	1.978	94.280			
15	.343	1.714	95.994			
16	.237	1.187	97.181			
17	.207	1.037	98.218			
18	.154	.771	98.989			
19	.116	.579	99.568			
20	.088	.432	100.000			

Extraction Method: Principal Component Analysis: The extraction of principal components or factors in principal component analysis takes place by calculating the eigenvalues of the matrix. The number of positive eigenvalues determines the number of dimensions needed to represent a set of scores without any loss of information. Hence, the number of positive eigenvalues determines the number of factors/components to be extracted.

The second column represents the percentage of variance and the third column represents the cumulative percentage of variance. Each of the rows indicate the attribute wise total extracted value after factor

analysis, percentage of variance of extracted value, cumulative value of percentage variance of the extracted value, total value of sum square loadings, percentage of variance of sum square loadings and cumulative of the percentage variance of the sum square loadings. This table shows the cumulative value of the first four attributes becomes more than 50 % and cumulative value of rest of the factors are 50%. That means the four factors overpower the rest of the factors. We take into consideration only the powerful factors and reject the rest.

Figure 1 provides a graphical representation of all positive values. The table shows an exponential decal toward zero

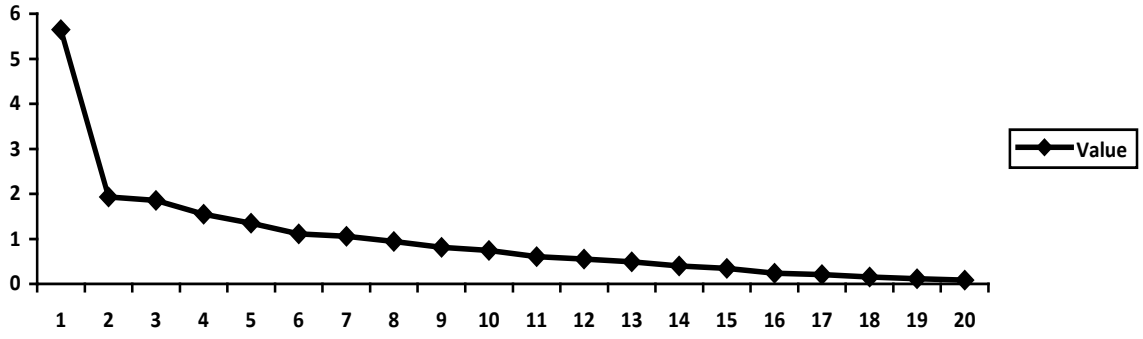

Figure 1: Graphical Representation of Positive Values It is the graphical representation of the positive values of the extracted numbers

Table 5 represents the component matrix, which is the final section of factor analysis. In this table the first column represents the attributes taken into consideration for our study.

Table 5: Component Matrix

	Component / Factors			
	1	**2**	**3**	**4**
Uncertainty of job after acquisition	**.858**	.119	.183	.499
Loss of identity	**.869**	.400	.281	.750
New leadership style	.421	.340	.230	**.610**
New rules and regulations	.244	.284	**.371**	.167
New appraisal methods	.523	.326	.317	**.902**
Change of hierarchy	**.712**	.239	.178	.479
Prestige. power and status	**.756**	.306	.150	.282
Work culture	**.923**	.356	.139	.169
Transfer fear	.228	.580	.147	**.877**
Loss of self Actualization	.724	.385	**.742**	.237
Poor Employee involvement in decision making process	.344	.478	.347	**.651**
Increased work pressure after acquisition	.248	.294	**.373**	.113
Bank can compete with global banks	.409	**.896**	.225	.204
Improved service quality	.597	**.612**	.316	.203
Complicated Process of service	.840	**.865**	.669	.181
HR's role in acquisition	.222	.200	**.247**	.205
Employee Consultation	.182	.299	**.625**	.195
Future benefit	**.642**	.229	.369	.221
Benefit in terms of present pay structure	.239	.110	**.258**	.232
Restructuring of key positions	.427	.812	**.632**	.272

Extraction Method: Principal Component Analysis. 4 components extracted: this table shows the correlations between the original variables and the newly obtained factors or components. It is furthermore always important to check the communalities after factor extraction. If the communalities are low, the extracted factors account for only a little part of the variance, and more factors might be retained in order to provide a better account of the variance.

The second column is divided into four sub columns, indicating the component or factors gathered from the Table 4. Four components are taken into consideration namely: 1) degree of awareness for future growth and prospects of an employee after mergers and acquisitions, 2) degree of uncertainty of an employee after mergers acquisitions, 3) degree of future growth of an industry after mergers and acquisitions and 4) degree of personal problems of an employee after mergers and acquisitions. The rows indicate how the attributes are correlated to the newly obtained components or factors. The highest value of each of the attributes against each factor indicated the relation between them.

CONCLUSION

This paper examines the effects of mergers and acquisitions on the morale and psychology of the employees in the State Bank of Indore. The authors developed a model to show the factors employees resist in this process. The authors collected primary data from the employees of State Bank of Indore. Factor analysis was applied based on the idea all variables within a particular group are highly correlated among themselves but have relatively small correlations with variables in a different group. Several statistical calculations were made to test whether the sample size is sufficient. We consider twenty factors and close on a model with four attributes. The four attributes are 1) degree of awareness for future growth and prospect of an employee after mergers and acquisitions, 2) degree of future growth of an industry after mergers and acquisitions, 3) degree of uncertainty of expectation of an employee after mergers acquisitions and 4) degree of personal problem of an employee after mergers and acquisitions.
Out of these four factors three factors curtail from an organization's point of view. We can ignore the factor called degree of personal problems. So, this paper recommend that a pre merger task force should be prepared, to take the feedback from the employees and make them understand the effects and the benefits of mergers and acquisitions in formal and informal platforms.

From Table 5 we see the correlation between the 4 factors and the attributes taken for study. The first attribute, uncertainty of job after acquisition is highly correlated to the first factor, degree of awareness for future growth and prospect of an employee after mergers and acquisitions. This attribute shows the highest value for factor 1. Likewise we can say attributes like loss of identity; change in hierarchy; prestige, power and status; work culture; future benefit are highly correlated with the first factor. These attributes come under the first factor, i.e. degree of awareness for future growth and prospect of an employee after mergers and acquisitions.

When we consider attributes like bank can compete with global banks; improved service quality, complicated process of service, they are highly correlated with the second factor, degree of future growth of an industry after mergers and acquisitions. Third if we consider attributes like new rules and regulations; loss of self actualization; increased work pressure after acquisition; HR's role in acquisition; benefit in terms of present pay structure; restructuring of key positions is highly correlated with the 3rd factor, degree of uncertainty of expectation of an employee after mergers acquisitions. Finally, attributes like new leadership style; new appraisal methods; poor employee involvement in decision making processes is highly correlated with the 4th factor, degree of personal problems of an employee after mergers and acquisitions. All the attributes have highest value with their corresponding factors.

Merger and acquisitions of new and related industries are common phenomenon. Employees are generally apprehensive of loss of job or stagnation in the job or new policies and procedures adopted by the organization acquiring another organization or one company merging with another company. Employee resistance in this situation often delays the process and adversely affects the business. While investors pay adequate attention towards compliance of the provisions of various Indian Laws as mentioned earlier along with changing business scenarios and turnover arising out of such mergers and acquisitions, little attention is paid towards emotional and psychological aspects of the employees at all levels. This paper recommends that HR have a critical role to play in maintaining transparency in

communication regarding the need for merger and acquisitions and its effect on working and service conditions of the employees.

Appendix A

Factors	1	2	3	4	5
Uncertainty of job after acquisition					
Loss of identity					
New leadership style					
New rules and regulations					
New appraisal methods					
Change of hierarchy					
Prestige, power and status					
Work culture					
Transfer fear					
Loss of self Actualization					
Poor Employee involvement in decision making process					
Increased work pressure after acquisition					
Bank can compete with global banks					
Improved service quality					
Complicated Process of service					
HR's role in acquisition					
Employee Consultation					
Future benefit					
Benefit in terms of present pay structure					
Restructuring of key positions					

Copy of survey instrument (ECO SCALE) Scale: 1= strongly Disagree (20% and less); 2= Disagree (more than 20% but less than 40%); 3= somewhat agree (more than 40% but less than 60%); 4= agree (more than 60% but less than 80%); 5= strongly agree (more than 80%)

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USUMACINTA CANYON STATE PARK: SOCIAL TOURISM ALTERNATIVE

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ABSTRACT

Alternative tourism represents an important source of income in Mexico. There are many potential sites remaining to be developed in the southeast of the country. Included in this group is the state park Cañón del Río Usumacinta, Boca del Cerro. This park is located in the municipality of Tenosique and is surrounded by indigenous populations of the Tzotzil, Chol, Maya and Zoqueg. The objective of this study is to carry out an integral diagnosis of socioeconomic and demographic conditions, and of nature in the region, to identify sites and strategies for tourism development in the area of the Cañón del Usumacinta state park. The study is non experimental as none of the variables described in the project were controlled or modified. Rather the study is trans-sectional as the data were recorded at a single moment in time. The objective is to characterize the phenomenon to provide alternatives or solution proposals (Hernández, Fernández, Baptista, 2006). The paper reports results of 129 interviews carried out with residents of areas adjacent to the Cañón del Usumacinta state park. The paper also identifies the ecotourism potential of the area. The findings of the study constitute a series of marketing ideas, useful in decision making with respect to the tourism development of the region.

JEL: M21, M31

KEY WORDS: Cañón del Usumacinta State Park, alternative tourism, communal host, social marketing.

INTRODUCTION

Mexico occupies an important position with respect to tourism offerings and demand, especially in the sun and beach segment. Alternative segments remain under development. The sun and beach sector has a positive impact in the Mexican economy. However a new focus should lead to planning and sustainable development of activities. Tourism options have become increasingly more diversified. In particular, sustainable tourism has the potential to create permanent and well paying jobs for individuals including the inhabitants of the areas developed for such tourism.

The Cañón del Usumacinta state park is a natural destination that covers approximately 25,000 hectares. It has outstanding scenic and landscape value, and important qualities that emphasize its potential as a natural resource. For this reason it was selected for inclusion in the state system of protected natural areas in June 2005 (Sistema Estatal de Áreas Naturales Protegidas). Considering its strategic importance for national development, state authorities have undertaken efforts for the area to be declared a refuge for wild flora and fauna. With this categorization it would be possible to access important sources of world financing that favor conservation and development strategies in protected areas.

The results obtained in this study and in those of other specialists indicate that the Cañón del Usumacinta (Boca del Cerro) state park has potential for ecotourism. It has a close relationship with nature protected, areas, and the social impact it has on the vulnerable groups that inhabit the area. The Quebec Declaration emphasizes that tourism is one of the most important sectors in the world economy. Its potential to reduce poverty is recognized, together with its contribution toward environmental protection and

threatened ecosystems. Ecotourism is based on the principles of sustainable tourism in economic, social and environmental terms. It is different with respect to its contribution to the conservation of the natural and cultural patrimony, and the inclusion of the local and indigenous communities in its planning, development and operation, that contribute to social well being. It also provides travelers with an interpretation of the natural and cultural patrimony of the tourism destination. It lends special attention to independent travelers, as well as to organized circuits for small groups.

In a global context, cultural diversity is recognized because of the presence of indigenous communities that have preserved their customs and traditional practices. These customs and practices have proven to be sustainable throughout the years. Protected areas, rich in biodiversity and culture, are the home of populations that frequently live in poverty and lack minimum services like health, education, communications and infrastructure that are needed to access development opportunities. As a consequence, ecotourism represents an alternative source of income for local and indigenous populations and their culture, as well as for conservation and sustainable use of natural resources (OIT, 2006).

The results presented in this paper correspond to a project financed by the Fondo Mixto CONACyT and the government of the state of Tabasco. The paper is organized as follows: The literature revisiew presents the background of tourism in Tabasco and the trends of alternative tourism. Next, the methods section describes the segments studied and emphasizes the inhabitants of six communities adjacent to the Cañón del Usumacinta. The research techniques used are presented, together with the design and dimensions of the applied instruments, and analysis techniques utilized. The results section presents the field data recorded for the segment of communal inhabitants. Finally, the conclusions present a discussion on the advantages and disadvantages of designing and developing sustainable tourism projects that include social, cultural and economic development of community inhabitants.

LITERATURE REVIEW

Tourism has been practiced throughout time and has evolved. Seguí (2006) noted the existence of a new science at the start of the XXI century called touristology. From the point of view of AMFORTH (Asociación Mundial de la Formación Turística y Hotelera), there is present need to analyze tourism from all points of view specifically considering its multidisciplinarity nature. The term *tourism*, as Amaya (2006) noted, means different things in different cultures. In English speaking countries, the terms "travel industry" and "hospitality industry" are used apart from the word *tourism*. In Mexico, this term includes all meanings, whereas in English speaking countries it refers more to leisure travel. Thus, in the United States, a business trip is not considered tourism, while in Mexico one speaks of *business tourism*.

Álvarez and Espinosa (2008) stated that tourism constitutes one of the faster growing economic activities worldwide. According to Alvarez and Espinosa (2008), tourism has created a new culture in which growing environmental concerns are a strong factor. They encourage a new tourism with the goal of integrating with nature, consolidating international request for products with specific characteristics, and directed towards the very varied forms of this type of tourism, many of which have developed around protected areas. Tourism is no doubt following new lines directed towards the enjoyment of nature with a social focus. Álvarez and Espinosa (2008) stated the autochthonous culture of every territory is the result of humanized nature, where the individual not only creates objects that allow him to satisfy his material needs, but is constantly reproducing himself, enriching and diversifying his social relationships.

Tourism as a human activity has received little attention in social analyses. However, tourism from an integral point of view is the object of research, study and debate within various social sciences such as sociology, economy, anthropology, politics and geography. A multidisciplinary interest that converges around touristic activities may be seen. In this sense, nature tourism or ecotourism has been treated from

the perspective of landscape ecology, where geography, biology and architecture are combined. That is to say that landscape ecology analyzes the area and borders of ecosystems, particularly those that are influenced by human activities (Castillo & Panosso, 2010). Worldwide trends show marked interest in services that, together with market products, currently constitutes the axis of consumer and labor markets. In other words, a balance between commercial and social objectives is being sought through sustainability. Fenell (2002) stated that sustainable tourism leads to the application of sustainable development principles in the context of tourism. Salido *et al* (2009) pointed out that there are various definitions and focuses regarding sustainable tourism. Bringas and Israel (2004) pointed out that the idea of sustainable development is having an important impact on tourism activities. Together with the sun and beach sector, new forms of thinking and engaging in tourism are emerging, from which natural and cultural resources are used in a sustainable way. These new forms have been called "alternative tourism" by academics.

According to Pinkus (2010), ecotourism is incongruent with the social, economic and environmental impacts in the communities. Studies carried out in Quintana Roo, Campeche, Chiapas and other states of the Mexican Republic, as well as in other countries of the region such as Guatemala and Belize, have reached the same conclusion (Norris *et al*. 1999, Daltabuit *et al*. 2000, Barbosa 2006). Ecotourism must not create false expectations of its potential, but should complement the different productive activities of each community, depending on the real needs and environment where they are located. For ecotourism to be successful it must be incorporated into an integral plan of sustainable development that takes into consideration traditional community activities (Pinkus, 2010).

In this paper, Sustainable Tourism Development (STD) focuses on promoting the development of tourism that favors and balances social equity, natural sustainability and profit, with the purpose of satisfying needs of the host regions, tourism investors, people that provide tourism services and tourists, in order to protect, strengthen and guarantee future development opportunities (SECTUR/SEMARNAT, 2004:12, cited by Salido, Bañuelos, Romero, Romo, Ochoa, Rodica & Olivares).

Tourism in Tabasco

The territory of Tabasco was a transit corridor for various migrations. Because of its geographical location, it was the commercial border between two great worlds of pre-colombian Mexico: the Maya and the Aztec. Since remote times, the abundance of water and natural resources have made Tabasco an ideal land for the establishment of human settlements. One of the oldest Mesoamerican civilizations, the Olmec, bloomed in these lands towards the year 1500 BC. They were followed by the Zoques, their possible descendants, who settled throughout the region. Later, the Mayas dominated the area and built many cities. The marvelous settlements that remain in Comalcalco, Pomoná and Reforma, and the Aztecs located further south in Cupilco are monuments to these civilizations.

In the context of these natural characteristics, tourism in the region has not been developed fully and its related activities have tended to be isolated. Business tourism has been the most prosperous, but other options such as alternative tourism have not been developed. This is surprising given the region is one of the richest in flora and fauna diversity. Moreover it has huge cultural potential that has accumulated throughout the history of the Mexican southeast. The government divides the state into two regions: the Usumacinta region and the Grijalva region, and subdivides it into five regions according to the location and the natural characteristics of each: the central region, Chontalpa region, wetlands, mountain region, and the region of rivers where the municipality of Tenosique is located.

Projects have been carried out to take advantage of adventure tourism in places like the caves Grutas del Coconá, the wetlands of Pantanos de Centla, the rivers Grijalva and Usumacinta, and the so-called Seven

Routes: Ruta Biji Yococt´an, Ruta del Chocolate, Ruta Villahermosa, Ruta Pantanos, Ruta Ríos, the mountain adventure route Ruta Aventura en la Sierra, and Ruta Olmeca Zoque.

Ecotourism and Adventure Tourism Markets

Ecotourism is oriented to consumers that travel for interaction, knowledge and observation of nature, and seek to contribute to its conservation. It tends to take place in areas unaltered by man and usually includes activities aimed at understanding and cultural awareness (SECTUR n/d). Hernández and Gunhill (2006) suggest that sociocultural and environmental characteristics are important factors of the local identity, and that tourism activities frequently do not consider the fragility of the ecosystems or favor the wellbeing of the local inhabitants. In spite of the fact that tourism is considered an economic motor, it is also the source of environmental damage. San Martín and Salcedo (2007) stated that this activity has an important impact on social relationships, both in the places where it takes place and in the countries of the visitors. Thus, an ecotourism product requires the development of a strategic plan that includes attractive places and activities for the buyers, infrastructure, services providers and an optimum level of hostmanship on the part of the local population.

Among the main activities considered in an ecotourism product are the observation of the ecosystem, stars, flora (cacti and orchids), the geology and fossils. These services are characterized by a precise profile, as ecotourists and adventure tourists are different. Adventure tourists tend to be young people that travel mainly in couples (48%). Moreover 67% of these tourists are 25-45 years old. Ecotourists span a wider range of ages, with most 25-45 (42%) and 46-60 (26%) years of age who travel in couples (39%), groups (37%) and families (23%) (CESTUR, 2006).

The establishment of ecotourism and adventure tourism in Mexico is possible thanks to the wide range of activities that may be practiced, the great biological diversity and variety of places, and the existence of businesses that offer related services (SECTUR, 2001). According to data published by SECTUR (2006), the market segment to which these efforts are directed is both national and international. In the latter group, the United States represents 71% of the tourism market in Mexico. The ages of the national and international clients vary between 25 and 49 years, with Mexicans representing the younger group. Both groups have university educations (70 and 80%, respectively) (CESTUR, 2006).

The spending capacity of ecotourists is approximately $40,000 pesos per month, equivalent to $43,636 USD per year (CESTUR, 2006). With respect to adventure tourism, the market is made up of people that travel looking for achievements and challenging experiences presented by nature and excluding sports competitions. According to SECTUR (2001), the value of annual formal demand for ecotourism and adventure tourism activities is more than $750 million pesos. The activities with the greatest potential to grow include the observation of ecosystems, scuba diving, river rafting, walking and mountain cycling.

Social Marketing

From the marketing point of view, sustainable tourism represents a program that foresees and prevents problems that may crop up in a particular geographical area when the reception capacity is overloaded. Many social communities that depend directly on tourism are not coordinated efficiently with productive sectors. Sustainable tourism is characterized by constant and growing changes, and responds with prices, comfort and opportunities that attract tourists (Kotler, 2004).

The application of social marketing to alternative tourism may carry direct or indirect benefits to those that participate in the interactive processes, including the buyers, sellers and society on the whole. Through social marketing, one endeavors to determine and satisfy the needs and desires of the goal

market, the wellbeing of society through the health care of the consumers, and the preservation of the environment. Thus, its application increases the possibilities for businesses and organizations to obtain short, medium and long term benefits (CESTUR, 2006).

In order for social marketing strategies to be effective in alternative tourism, seven elements must be considered: to make each member of the business or organization aware; to identify and satisfy the needs and desires of the goal market; to conceptualize products or services that increase or preserve the wellbeing of the clients and society; to find purveyors that are familiar with the concept of social marketing; to follow laws and rules that are in force; to avoid a product or service from affecting the clients´ health; to generate expectations that can be delivered or improved on, and not lie about competing groups (Thompson, 2006).

With respect to alternative tourism products, the goal is to understand the needs of the consumer as the main axis of commercialization strategies (Vera, 2003). For this reason, a constant monitoring and close communication with clients requires efforts on the part of the businesses and institutions that give the service, in order to provide a new level of value creation and differentiate one destination from other destinations. The objective is to transfer whole experiences to clients, as they are buying the promises and skills that they will get when they consume the products and services (Araujo & Clemenza, 2005).

METHODOLOGY

The general objective of the study is to carry out an integral diagnosis of the socioeconomic conditions and of nature in the region to determine the ideal sites and tourism development strategies in the area of the Cañón del Usumacinta state park. The study design was defined as non experimental as none of the variables described in the project were controlled or modified. The study is trans-sectional as the data were recorded at a single moment in time. It was descriptive as its objective was to characterize the phenomenon in order to provide alternatives and new proposals (Hernández, Fernández, Baptista, 2006).

Three segments were studied: 1) the people of 26 communal lands adjacent to the Cañón del Usumacinta state park, 2) the directors of travel agencies, business consultants, and employees of the national institute of anthropology and history (Instituto Nacional de Antropología e Historia) and local government deputies, and 3) national and international tourists.

People of the communal lands were selected from the six communities nearest the canyon in order to observe and identify the phenomenon in greater detail. Businessmen and employees selected were related to the tourism sector. National and international tourists were interviewed at strategic entrance points. The segments were classified as A (local population), B (businessmen and employees) and C (tourists). Of these segments, the results relative to Segment A are reported in this paper.

Three individually designed instruments were used, one for each segment. In the case of segment A, the instrument was structured with four dimensions (level of hostmanship, knowledge of the area, care of the environment and tourism potential) distributed in 25 questions. Eight general questions were also included of which four correspond to socio demographic variables such as age, sex, schooling and housing, and four to data on work and family income. The instrument was designed with multiple choice questions with five response alternatives. The questionnaire was applied as an interview to the people of the selected communities. The test period lasted almost one month, and a total of 129 questionnaires were collected. The details of the questionnaire and the definitions of each dimension are presented in Table 1. Analyses were carried out by hand and with the aid of other analysts, as the study was predominantly qualitative. Care was taken at all times to interpret the data considering the field observations.

RESULTS

After carrying out a physical inspection of the 27 localities, six of the most representative, both in terms of the population and of potential touristic development, were selected. In general, the field study was varied in order to obtain an integral diagnosis. A definition of proposals focused on specific segments that allowed the design and development of tourism products, and their commercialization from the social marketing point of view.

Table 1. Survey Specifications

Dimension	Definition	Questions
Level of hostmanship	It refers to the training and willingness of the communal people to receive the tourists that may arrive at their communities.	9.- Of the following, which two phrases best describe tourism for you? 10.- How well or badly prepared do you personally feel to deal with national or international tourists? 11.- What requirements must people satisfy to be able to provide a good service to tourists? 16.- Do you know what ecotourism is? 17.- Have you participated in any tourism activity? 18.- As part of the community, would you be willing to receive tourists that visit the Cañón del Usumacinta and its natural areas? 21.- Would you like to learn to design or make a traditional product? which? 22.- Up to how many tourists per day could you and your family attend to? 23.- Would you be willing to receive tourists in your house? 24.- If you would, how much would you charge them per day?
Knowledge of the area	It seeks to evaluate the knowledge of the people of the communities with respect to their geographical and cultural context.	1.- Do you know what touristic destinations there are in Tabasco? 2.- In your opinion, what is the main touristic attraction of Tenosique? 8.- What do you consider is best to receive an economic profit from the natural richness of the Cañón del Usumacinta? 20.- Do you know how to make a traditional product of the region?
Care of the environment	It evaluates the type of commitment that the communal people have towards the care of the environment.	5.- Of the following, who would you say is mainly responsible of caring and protecting the ecology and environment of the state? 6.- Of the following, which would you say is the most important ecological and environmental problem of the state? 7.- When someone lives in an area with Nature as important as that of the Cañón del Río Usumacinta, what activities should he carry out to care for it and economically profit from it? 14.- What relationship should there be between the economy and the ecology? 15.- In general terms, how much do you think that people like you and me worry about protecting and conserving the ecology and environment?
Tourism potential	It refers to the importance that the people of the communities give to the area of the Cañón del Usumacinta and the possible products they envision.	3.- To which tourism projects should economic resources be given in Tenosique? 12.- If you could decide on a tourism project in the area, what would you ask for as a benefit? 13.- What do you think of the tourism development in the area? 19.- What activities could you offer tourists? 25.- Would you be willing to participate in courses for training and formation in tourism? 26.- What would you be willing to do to make the Cañón del Usumacinta an attractive site for national and international tourism?

This table presents the questions applied to inhabitants of the six communal lands adjacent to the Cañón del Usumacinta state park. The instrument was designed with four dimensions: level of hostmanship, knowledge of the area, care of the environment and tourism potential.

The study provides data on the potential for development of alternative tourism in the region, an inventory of urban and rural fixed social capital, an inventory of urban and rural tourism accoutrement, and the touristic vocation and profile of the communal hosts. The diagnosis also identified strengths and weaknesses in the communities, with regard to tourism development.

Touristic Potential of the Cañón del Río Usumacinta State Park

To determine the touristic potential of the Cañón del Río Usumacinta, the study took into account the economic and development needs of the communities in the municipality of Tenosique, Tabasco, the natural beauty of the place, and the potential contribution to the objectives of the state´s tourism program (Programa Estatal de Turismo). The touristic potential of the area considers potential intercultural relationships derived from the touristic development of the area, in association with social relationships

maintained during the visitors´ stay. In this context, the social responsibility of inhabitants of the potentially touristic area must be considered.

The activities most suitable for development, according to the preferences of the interviewed tourists, were walking along trails, riding and swimming in the rivers. Places that visitors choose to visit in Tabasco were mainly beaches and natural areas. This proves that the region may profit from its geographical location, climate and vegetation to establish tourism programs, projects and products. In addition to ecotourism and adventure tourism, the long term possibility of developing activities related to rural tourism, that would require adequate projects and investments, may be seen (Table 2). Under this perspective, both the tourist´s knowledge about the Cañón del Usumacinta state park and the promotional activities that the municipality of Tenosique carries out regarding tourism to attract visitors to the area, play an important role.

Table 2: Preferred Place to Visit in Tabasco

OPTION:	ABSOLUTE	PERCENTAGE
Beaches	86	32%
modern cities	36	13%
ecotouristic parks	18	7%
colonial cities	27	10%
archaeological areas	34	12%
natural places	58	21%
others	14	5%
	273	100%

This table presents the preferences of the tourists that arrive in Tabasco, with respect to places to visit during their stay. Touristic parks and natural areas total 28%, which means that approximately three out of ten visitors would seek options with alternative tourism activities.

Inventory of Urban and Rural Fixed Social Capital

Urban inventories include Tenosique, the municipal capital. It's infrastructure includes communications, gas stations, taxis and urban transport. Access routes and inter-municipal roads that connect the communities have faulty paving due to a lack of maintenance. Signs and signals are present a measure of order, although they are still insufficient and non competitive for the purposes of touristic activities. The municipality has a good telephone system that includes telephone booths that provide service to communities distant from the municipal capital, as well as special offices that provide service.

The examination of rural fixed social capital revealed the infrastructure and communications in the communities, except Redención del Campesino, do not include some basic services such as gas stations, regular passenger transport or other means of transportation like taxis. The network of roads leading to these communities are acceptable for traffic, although some are difficult to drive on. Access routes to the municipal capital Tenosique and on inter-municipal connections is not entirely acceptable with a combination of paved and dirt roads. Inhabitants of the communities tend to walk many kilometers, and then use basic transportation such as horses. These conditions do not seem to represent an obstacle for the establishment of alternative tourism products. According to the experts, such conditions are ideal for these activities.

The signs and signals that exist are basic and modest, but useful for starting programs and products of ecotourism and adventure tourism. Some houses have telephones or telephone booths. All the studied communities have a health care center and primary schools, as well as grocery stores where basic products can be bought.

Inventory of Urban and Rural Touristic Accoutrement

With respect to the urban inventory of tourism accoutrement (lodging, food, leisure and other complementary services), a variety of commercial places including restaurants, small eateries, taco restaurants, coffee shops, hotels, grocery stores, supermarkets, clothes shops, chemists, bank services, internet services and, although the exploration was preliminary, it was observed that the existing economic entities modestly provide the minimum services required by tourists. However, it was also noted that the availability of the two basic services, food and lodging, is insufficient and deficient. It is not easy to find a place to have breakfast. In contrast, there is a great diversity of places open at night offering a variety of dishes. Interestingly, no alcoholic beverages are sold, not even with meals.

The infrastructure, comfort and cleanliness of the hotels are seriously deficient for overnight stays. The time tourists stay in the municipal capital is short as people only pass by Tenosique. Visits seem to be limited to the archaeological area of Pomoná, which results in limited use of locality lodging services. In the rural areas, there is no infrastructure for lodging, food, leisure and other complementary services, however, the services expected by ecotourists are different from those required by conventional tourism.

Touristic Vocation

Touristic vocation in the area may be defined in many ways depending on the segment of the market to which products are directed. However, initially it may be defined as nature tourism considering the presence of natural touristic resources such as mountains, hills, ravines, canyons, caves, forests, wild fauna, rivers, streams and waterfalls. A second vocation may be defined as action tourism considering the opportunities there are to practice multiple activities of extreme sports, including kayak, tyrolean, rappel, caving, bungee jump, paragliding and motonautics. A third vocation would be relaxation tourism which uses natural beauty elements in a different way from nature tourism. Finally, rural tourism enables city people to interact with rural inhabitants, both in their daily work and in sharing their food and customs. The separation of vocations does not mean that the different products cannot combine aspects of the different vocations. They are separated only on paper for organization and analysis purposes.

Profile of the Communal Host and SWOT Analysis

Six variables related to care of the environment, economic activities, knowledge of the area, life styles, training and education were recorded for the profile of the inhabitants as potential hosts for tourists as is shown in Table 3.

Table 3: Profile of the Communal Host

Environment	Economy	Knowledge of the area	Life style	Training	Education
Interest in caring for the environment. They are not aware of the natural richness they have but wish to care for it.	They wish their community to develop economically. They see in tourism an alternate source of work and improvement of their lives. Their main activity is in the primary sector.	Most don´t know the most attractive areas in their municipality.	The life style of the communal inhabitants is unhygienic and gastrointestinal diseases are common.	They are aware of their weaknesses regarding the knowledge and abilities required by tourism. They are willing to take integral training to become competitive. They wish to cooperate to be trained to attend to tourists.	They are untrusting, polite and educated. Most studied primary or incomplete primary, and others are illiterate.

The table describes the levels of hospitality and willingness of residents to establish or develop tourism products. Willingness to cooperate in projects and to train in activities of the sector were observed. These communal advantages could be employed usefully if they have project leaders that manage them with seriousness and respect that they deserve, as authentic owners of the natural richness that surrounds them.

The study found potential for the design and start of tourism products. The Cañón del Río Usumacinta (Boca del Cerro) state park has enough natural attractions that are not fully employed usefully to warrant additional development. Several advantages and disadvantages of developement, both exogenous and endogenous, were identified in Table 4.

Table 4: SOWT of the Cañón del Usumacinta (Boca del Cerro) State Park

Strengths	Opportunities	Weaknesses	Threats
There is a complete willingness of the inhabitants to train to receive tourists.	There is a definite coincidence among what is requested, is suggested and is offered in terms of ecotourism and adventure tourism activities.	Other adventure tourism projects have remained unfinished. That has disappointed the residents, as they feel cheated and their expectations have changed unfavorably.	An insufficient structure for the development of tourism products.
There are very attractive natural areas with potential for ecotouristic development.	An opportunity lies in the construction of part of the Guatemala-Mexico highway that will allow more tourists to pass by the municipality. This may serve to attract them to the area.	Unsanitary conditions in the life style of the community residents.	The movement of illegal migrants from Central America and the resulting presence of military stop points in areas near the communities to be developed for tourism.
	Changes in choice of sites, permanence and petition of services by tourists constitute an opportunity for the state of Tabasco, the municipality of Tenosique and the Cañón del Río Usumacinta state park.	The community residents are not ready to become hosts to tourists that visit their lands, as a result of their scarce contact with areas outside their places of origin and of their low or null level of studies.	The scarce presence of tourists in the municipality of Tenosique and the low commercial position of the place and its communities.
	According to the world organization for tourism (Organización Mundial de Turismo), there are growing requests for alternative tourism worldwide.	Most of the interviewed tourists came from the southeast, which proves that a greater promotion is needed in the central and northern states of Mexico.	There are very few foreigners that seek alternative tourism services. They represent 3% of all tourists that visit the state.
	The official declaration of the Cañón del Usumacinta state park as a natural reserve.	Promotion has not been sufficiently effective to attract tourists to this geographical area.	Knowledge and physical references to the state park on the part of tourists, business employees and directors, and local residents are very low.
		The pochó dance and Pomoná are the main known attractions. However, neither are competitive, the first because it has lost originality and quality and the second because it is not efficiently administrated and controlled.	There are communities with residents that do not speak or understand Spanish which, although constituting an attraction to tourists, also limits training for tourism with a view to establish tourism products.
		Boating competitions in the Cañón del Usumacinta are no longer taking place. This has diminished interest in the municipality.	Felling of forests and tropical forests, and pollution of aquifers and air obviously affect the environment and restrict the vastness of natural attractions.
			Almost half of the interviewed tourists showed no interest in knowing Tenosique and its adjacent areas, because of a lack of knowledge of its attractions.
			The constant slashing and burning of lands in the area will on the short term result in the elimination of the flora and fauna, apart from environmental pollution.

This table presents the internal and external advantages and disadvantages of the Cañón del Usumacinta state park. Challenge to the development of an ecotourism project that involves the participation of community residents may be seen. The study identifies several disadvantages that must be resolved before an ecotourism project may be developed.

CONCLUSIONS

An integral diagnosis of social and economic conditions of the Cañón del Usumacinta State Park region identified characteristics, conditions and natural resources favorable for tourism development. The study´s results suggest the design and establishment of adventure tourism and ecotourism products that are associated with a need for studies on ecology, identity and culture, effort to develop, and economic impact. The Cañón del Usumacinta State Park has all the conditions necessary to capitalize its nature potential and convert the site into an alternative tourism route. With appropriate strategies it would become competitive in its surroundings and for the tourism market.

Regarding identity and culture, it is important to make community residents and leaders or group heads aware of local identity and culture issues. For this reason, both a diagnosis of local culture and inventory of cultural attractions should be completed. This should be done with participation from all stakeholders, as the axis of the product would define cultural attractions with adequate information development and that could form part of a circuit. It is also necessary to carry out a diagnosis and inventory of cultural attractions with social and economic participation, and determine the legal framework that would emerge from the communities tourism activities.

In economic terms, it would be necessary to determine the impact of potential touristic development through a cost-benefit study of possible product components, and to evaluate the existing infrastructure and touristic services that would be used in the product development. The impulse required for these tourism products does not require a large investment, but it does require a high level of hostmanship on the part of community residents interested in participating in the tourism activities.

The development of three projects is considered possible with a view toward establishing a sustainable plan that would favor the communities adjacent to the Cañón del Usumacinta: 1) the development of community tourism products and their commercialization, 2) the legal framework in force and the development of the community´s tourism, and 3) efficient business efforts to be carried out regarding tourism activities. In each case, the strengths, weaknesses, opportunities and threats that must be considered when preparing a new tourism projects must be analyzed.

With respect to activities related that need to be carried out, actions for awareness and the presentation of a pre-design of the tourism project to organizations like the tourism sub-secretariat of the state (Subsecretaría de Turismo del Estado de Tabasco) should be carried out in order to receive financial support and to involve them in the project development.

The construction of a sustainable tourism product for the Cañón del Usumacinta state park requires the creation of an economically viable business community that applies strategies for the conservation of the natural resources and shows respect for and value the ancestral cultures. These details require previous training and a continuous and strict monitoring by the community.

It is necessary to define tourism products, to establish competitive prices in agreement with the market segments, and to design and implement promotional programs based on touristic attractions and quality of the services. Communal residents must play an outstanding hosts representing a part of the service itself. The residents, as potential hosts for tourists, desire community development. They realize that tourism represents an alternative source of work and improvement in the quality of their lives. They are aware of their weaknesses with respect to knowledge and abilities however, they are fully willing to train in order to become competitive. There are serious deficiencies including a high level of illiteracy among communal residents that will hamper their training. Also, their life style involves little hygiene leading to frequent gastrointestinal diseases and a reduced quality tourist products.

Finally the results indicate that communal residents of localities adjacent to the Cañón del Usumacinta are worried about the development of tourism products. They fear two problems: the destruction of forests, and the pollution of water and air caused by the slashing and burning that is common in this type of area.

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