Global Journal of

Business Research

VOLUME 5 NUMBER 3 2011

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WHAT HAS WORKED IN OPERATIONAL RISK?

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ABSTRACT

Financial institutions have always been exposed to operational risk – the risk of loss, resulting from inadequate or failed internal processes and information systems, from misconduct by people or from unforeseen external events. Both banking supervision authorities and banking institutions have recently showed their interest in operational risk measurement and management techniques. This newfound prominence is reflected in the Basel II capital accord, including a formal capital charge against operational risk, based on a spectrum of three increasingly sophisticated measurement approaches. The objective of this paper is to increase the level of understanding of operational risk within the financial system, by presenting a review of the literature on the modelling techniques proposed for approach such risk in financial institutions. We perform a comprehensive evaluation of commonly used methods, with a view to compare the performance of different estimators and quantitative estimation methods, for implementation of operational risk measurement. We find that there is currently high variability in the quality and quantity of disclosure on operational risk so, as our conclusion, we try to offer instructive and tractable recommendations for a more effective operational risk measurement.

JEL: G21

KEYWORDS: operational risk management, Basel II

INTRODUCTION

Operational risk has always existed as one of the core risks in the financial industry. Although there is no agreed upon universal definition of operational risk, the Risk Management Group (RMG) of the Basel Committee have recently developed a standardized definition of operational risk. It is commonly defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems, or from external events (e.g. unforeseen catastrophes). This definition includes legal risk, but excludes strategic and reputational risk (Basel Committee, 2004, 2005 and 2006; Coleman, 1999). While firms in general are beginning to more explicitly discuss the importance of operational risk, the new Basel Capital Accord explicitly requires the financial services industry to manage that risk. Particularly Hiwatashi (2002) argues that banks have already begun to consider operational risk because of advances in information technology, deregulation, and increased international competition. The growth of e-commerce, changes in banks' risks management or the use of more highly automated technology, have led, regulators and the banking industry to recognize the importance of operational risk in shaping the risk profiles of financial institutions. In this paper we discuss operational risk and its applications to financial services firms.

Our main focus is a review of the literature and the issues in this critical area in international corporate finance. It is somewhat ironic that while the major focus of regulators and institutions in the financial services sector over recent years has been on developing models for measuring and managing credit risk, most of the large losses in financial institutions over this time have been sourced to operational risk. Large operational losses as a result of accounting scandals, insider fraud, and rogue trading, to name just a few, have received increasing attention from the press, the public, and from policymakers. Considering the size of these events and their unsettling impact on the financial community, as well as the increase in the sophistication and complexity of banking practices, an effective operational risk management and measurement system, becomes increasingly necessary. In the banking world, large financial institutions have experienced more than 100 operational loss events in excess of $100 million each over the past decade. Rosengren (2002) reports examples of operational risk that have imposed significant costs on firms. First, damage to physical assets and disruption of the business are important considerations, including the $27 billion publicly announced insurance exposure to the 9/11 attack on the World Trade Center. In the same event it is assumed that the loss of Bank of New York totalled $140 million. Second, internal fraud and criminal behaviour also impose costs, such as the losses to Allied Irish banks of $690 million in rogue trading. Third, losses that result from dealings with clients, products, and businesses must also be considered. For examples, he cites the $2 billion settlement of the class action lawsuit by Prudential Insurance caused by its improper sales practices and the $400 million paid by Providian Financial for its unfair sales and collection practices and the $484 million settlement due to misleading sales practices at Household Finance. More the $9 billion loss of Banco National due to credit fraud in 1995, the $2.6 billion loss of Sumimoto Corporation due to unauthorized trading activity in 1996, the $1.7 billion loss and subsequent bankruptcy of Orange County due to unauthorized trading activity in 1998 and the $1.2 billion trading loss by Nick Leeson causing the collapse of Barings Bank in 1995.

A survey of the Basel Committee of 89 banks and one year of data (2001) shows 47000 loss events (relating to operational risk in general) totalling €7.8 billion. In their 2001 Annual Reports, Deutsche Bank and JPMorgan Chase disclosed economic capital of €2.5 billion and $6.8 billion for operational risk, respectively. The loss distribution of operational risk is heavy-tailed, i.e. there is a higher chance of an extreme loss event (with high loss severity) than the asymptotic tail behaviour of standard limit distributions would suggest. The tails of the distribution are of particular interest due to their potentially devastating effects, yet, they are also stochastically hard to get by. The paper is organized as follows. In Section 2 we describe Basel II Background. In Section 3 we provide a short overview of the actual Basel II operational risk (OR) approaches. In the next session reviewing the existing literature we describe some of current practices of ORM (Operational Risk Management), including an analysis of quantitative measurement approaches. In the lasts section, we summarize our findings.

LITERATURE REVIEW

Basel II

After more than seven years in the making, the New Basel Capital Accord on global rules and standards of operation for internationally active banks has finally taken effect. The latest revision of the Basel Accord represents the second round of regulatory changes since the original *Basel Accord* of 1988. In a move away from rigid controls, the revised regulatory framework is geared towards achieving a greater sensitivity to risk (both in supervisory authorities as well as in supervised institutions), and to achieve a better link, between the regulatory capital that banks need to retain and the risks that are part of a bank's business. At the end of 2006, the *Basel Committee on Banking Supervision* issued the final draft implementation guidelines for new international capital adequacy rules (*International Convergence of Capital Measurement and Capital Standards* or short "Basel II") to enhance financial stability through the convergence of supervisory regulations governing bank capital. As for credit risk, the Basel Committee does not believe in a "one-size-fits-all" approach to capital adequacy and proposes three distinct options for the calculation of the capital charge for operational risk. The Basel Committee was established by the central-bank Governors of the Group of Ten countries at the end of 1974.

The Committee does not possess any formal supranational supervisory authority, rather, it formulates broad supervisory standards and guidelines and recommends statements of best practice in the expectation that individual authorities will take steps to implement them through detailed arrangements - statutory or otherwise - which are best suited to their own national systems. In this way, the Committee encourages convergence towards common approaches and common standards without attempting detailed harmonisation of member countries' supervisory techniques. After the third and final round of consultations on operational risk, from October 2002 to May 2003, the *Operational Risk Subgroup* (AIGOR) of the *Basel Committee Accord Implementation Group* establishes various schemes for calculating the operational risk charge in a continuum of increasing sophistication and risk sensitivity - *Basic Indicator Approach* (BIA), *Standardized Approach* (TSA), and *Advanced Measurement Approaches* (AMA). A standardised classification matrix of operational risk into eight Business Lines (BLs) and seven Event Types (ETs) has also been defined, in order to encourage greater consistency of loss data collection within and between banks. In other words Basel II capital adequacy approach move from a crude Basic Approach, based on a fixed percentage of Gross Income - the indicator selected by the Committee as a proxy of banks' operational risk exposure - passing through an intermediate Standardised Approach (SA), which extends the Basic method by decomposing banks' activities and, hence, the capital charge computation, into eight underlying business lines, to the most sophisticated approaches, the Advanced Measurement Approaches (AMA), based on the adoption of banks' internal models. BIA requires banks to provision a fixed percentage (15%) of their average gross income over the previous three years for operational risk losses, whereas SA sets regulatory capital to at least the three year average of the summation of different regulatory capital charges (as a percentages of gross income) across BLs in each year.

The most sophisticated AMA approach, allows banks to use their internal loss experience, supplemented with other elements such as the experience of other banks, scenario analysis, and factors reflecting the business environment and the quality of the bank's internal controls, as the basis for estimating their operational risk capital requirements. Banks were allowed to choose a measurement approach appropriate to the nature of banking activity, organizational structure, and business environment subject to the discretion of national banking supervisors, (*supervisory review* - Pillar 2 of Basel II). In the U.S. the implementation of New Basel Capital Accord underscores the particular role of operational risk as part of the new capital rules. On February 28, 2007, the federal bank and thrift regulatory agencies published the *Proposed Supervisory Guidance for Internal Ratings-based Systems for Credit Risk, Advanced Measurement Approaches for Operational Risk, and the Supervisory Review Process (Pillar 2) Related to Basel II Implementation* (based on a previous advanced notices on proposed rule-making in 2003 and 2006).

These supervisory implementation guidelines permit qualifying banking organizations to adopt *Advanced Measurement Approaches* (AMA) for operational risk as the only acceptable method of estimating capital charges for operational risk for a certain class of financial institutions. So for the most part of institutions worldwide, operational risk, in addition to credit and market risk, is a determinant of minimum capital requirements. About capital adequacy ratio, the *minimum* amount of capital that regulators require a bank to hold, both under Basel I and Basel II amount to 8% of risk weighted assets. What has changed under Basel II, basically, is the way how this 8% are derived. The calculation of the ratio is now more risk sensitive and takes into account the increased sophistication of banking business and in particular best practices developed over time in the banking industry. Consequence of the foregoing statement, this calculation includes, as a new element in the formula to arrive at 8%, an explicit charge for operational risk. Thus, there are now three areas of risk that are related to the minimum capital requirement – 1) credit risk (which was the focus of the original 1988 Accord), 2) market risk of trading activities (which was introduced in a 1996 amendment to the Accord) and 3) operational risk.

$$\frac{Tier1+Tier2+Tier3}{CR+12.5(MR)+12.5(OR)} =\geq 8\% \qquad (1)$$

Too little capital puts banks at risk, while too much capital prevents banks from achieving the required rate of return on capital.

Basel II and OR Approaches

The BIA is the simplest approach and can be applied by all banks that either do not qualify for or are not obliged by their regulator to use one of the more sophisticated approaches. In the BIA, operational risk capital is calculated as a fixed percentage of a financial institution's annual three year average positive Gross Income (*GI)*:

$$K_{BIA} = [\sum(GI_{1\ldots n} * \alpha)]/n \qquad (2)$$

whereby $GI_{1..n}$ denominates the amount of GI in those years over the three year horizon, in which the financial institution's GI was positive and α denominates the scaling factor, which is currently set at 15% (BCBS, 2006). The Standardised Approach (SA) is relatively more advance compared to the Basic Indicator Approach (BIA). The Standardised Approach (SA) is better able to reflect the differing risk profiles across bank business activities. A financial institution that uses the SA is required to map its overall annual GI into eight business lines. The BCBS identifies the following business lines and their respective betas (2006) (Table 1).

Table 1: Business Lines and Betas Factors

Business Lines	**Beta Factors**
Corporate finance (β_1)	18%
Trading and sales (β_2)	18%
Retail banking (β_3)	12%
Commercial banking (β_4)	15%
Payment and settlement (β_5)	18%
Agency services (β_6)	15%
Asset management (β_7)	12%
Retail Brokerage (β_8)	12%

Table 1 shows business lines and betas

Every business line has its own beta to indicate embedded risk. A financial institution's total operational risk capital is calculated as the sum of operational risk capital calculated for each business line.

$$K_{tsa} = \{\sum_{years\ 1-3} max[\sum(GI_{1-8} * \beta_{1-8}), 0]\}/3 \qquad (3)$$

A financial institution's total operational risk capital is then the sum of operational risk capital calculated for each business line. As it is well-known this methodology assumes implicitly that aggregate losses are perfectly correlated. AMA banks use internal risk measurement systems and rely on self-assessment via scenario analysis to calculate regulatory capital that cover their total operation risk exposure (both EL – Expected Loss and UL – Unexpected Loss) over a one-year holding period at a 99.9% statistical confidence level. Although the application of AMA is in principle open to any proprietary model, the most popular methodology is by far the Loss Distribution Approach (LDA). *Loss Distribution Approach* (LDA) is based on an annual distribution of the number and the total loss amount of operational risk events and an aggregate loss distribution, by modelling the loss severity and loss frequency separately and then combining them via a Monte Carlo simulation or other statistical technique to form an aggregate loss distribution (see e.g. Frachot *et al.*, 2001, or Cruz, 2002). Under the Loss Distribution Approach, the bank estimates, for each business line/risk type cell, the probability distribution functions of the single event impact and the event frequency for the next (one) year using its internal data, and computes the probability distribution function of the cumulative operational loss. Following the usual LDA methodology, the aggregate loss is naturally defined as a random sum of individual losses:

$$L = \sum_{n=1}^{N} X_n = X_1 + \cdots . + X_n \qquad (4)$$

where *L* is the aggregate loss, *N* is the annual number of losses (i.e. frequency of events) and *Xn* are loss amounts (i.e. severity of event). Accordingly aggregate losses result from two distinct sources of randomness (i.e. frequency and severity) which both have to be modelled. In essence the LDA model assumes the three following assumptions within each class of risk:

i. N and $(X_1, X_2 \ldots \ldots)$ are independent random variables.
ii. X_1, X_2,...is a set of independent random variables,
iii. and X_1, X_2 follow the same marginal distribution.

The first assumption means that frequency and severity are two independent sources of randomness. Assumptions 2 and 3 mean that two different losses within the same homogeneous class are independent and identically distributed. Modelling the severity usually involves the application of parametric distributions such as the lognormal, Weibull, Pareto distributions, Lognormal-gamma, Exponential, Gamma or Loglogistic. Meanwhile, the frequency distribution is commonly modelled by Poisson, Binomial, and Negative Binomial distributions (de Fontnouvelle, Rosengren, and Jordan (2004) and Dutta and Perry (2006)).

(i) The Log-normal distribution:

$$f(x_i;\mu,\sigma) = \frac{1}{x\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{\log(x)-\mu}{\sigma}\right)^2} \qquad \forall\, x \in R_+, \sigma > 0, \mu \geq 0 \tag{5}$$

(ii) The Pareto distribution:

$$f(x_i; a, b) = \frac{ab^a}{x^{a+1}} \qquad \forall\, x \geq b, a > 0, b > 0 \tag{6}$$

(iii) The Weibull distribution:

$$f(x_i;\alpha,\beta) = \frac{\alpha}{\beta} \times \left(\frac{x}{\beta}\right)^{\alpha-1} e^{-\left(\frac{x}{\beta}\right)^{\alpha}} \qquad \forall\, x \in R_+, \beta > 0, \alpha \geq 0 \tag{7}$$

(iv) The Exponential distribution:

$$h(x) = \frac{1}{\lambda}\exp\left(-\frac{x}{\lambda}\right) I_{[o,\infty)}(x) \tag{8}$$

where the scale parameter $\lambda > 0$. The exponential distribution is a one parameter distribution used to model process with a constant time to failure per unit of time. The distribution is memoryless in that $P(X > s + t|X > t) = P(X > s)$ for all s,t ≥ 0.

(v) The Gamma distribution:

$$h(x) = \frac{1}{\lambda^{\alpha}\daleth(\alpha)} x^{\alpha-1} \exp\left(\frac{-x}{\lambda}\right) I_{[o,\infty)}(x) \tag{9}$$

where α and λ are positive, and $\daleth(\alpha)$=$\int_0^{\infty} t^{\alpha-1}e^{-t}dt$ denotes the gamma function. It can be shown that if $\{X_x\}$ are a sequence of independent exponentially distributed random variables with common parameter , then Y= $\sum_{t=1}^{n} X_t$ is distributed with $\alpha = n$ and common parameter λ. The exponential distribution is a

special case of the gamma function for $\alpha = 1$ The chi-square distribution with k degrees of freedom is also a special case of the gamma distribution for $\alpha = 2k$ and $\lambda = 2$.
(vi) The Loglogistic distribution:

$$h(x) = \frac{\eta(x-\alpha)^{n-1}}{[1+(x-\alpha)^{\eta}]^2} I_{[o,\infty)}(x) \tag{10}$$

Also sophisticated semiparametric distributions have been proposed. The generalized Champernowne distribution (GCD) is described in Champernowne (1936 and 1952) developed by Buch-Larsen, Nielsen, Guillen and Bolance (2005) in their semiparametric approach to better curve fitting in LDA. Use of the GCD coupled with a transformation approach can be found in papers by Gustafsson, Nielsen, Pritchard and Roberts (2006), Buch-Larsen (2006), Guillen, Gustafsson, Nielsen and Pritchard (2007), Clements, Hurn and Lindsay (2003), Buch-Kromann, Englund, Gustafsson, Nielsen and Thuring (2007) and Gustafsson and Nielsen (2008).

(vii) The GCD distribution:

$$f(x;\alpha,M,c) = \frac{\alpha(x+c)^{\alpha-1}((M+c)^{\alpha}-c^{\alpha})}{((x+c)^{\alpha}+(M+c)^{\alpha}-2c^{\alpha})^2} \,\forall\, x \in R_{+}, \alpha > 0, M > 0, c \geq 0 \tag{11}$$

The historical experience of operational risk events suggests a heavy-tailed loss distribution, whose shape reflects highly predictable, small loss events left of the mean with cumulative density of EL. As loss severity increases, higher percentiles indicate a lower probability of extreme observations with high loss severity, which constitute UL. While banks should generate enough expected revenues to support a net margin after accounting for the *expected* component of operational risk from predictable internal failures (EL), they also need to provision sufficient economic capital to cover the *unexpected* component (UL). If we define the distribution of operational risk losses as an intensity process of time *t*, the cumulative distribution function of EL reflects a high expected conditional probability of small losses over time horizon *T*, so that

$$EL(T-t) = E[P(T)-P(t)|P(T)-P(t) < 0] \tag{12}$$

UL captures losses larger than EL below a tail cut off (or threshold value) E$[P_{\alpha}(T)-P(t)]$.beyond which residual losses occur at a probability of α or less. The specification of UL (less EL) concurs with the concept of *Value-at-Risk* (VaR), which estimates the maximum loss exposure at a certain probability bound for a given aggregate loss distribution. Thus, we can write

$$UL(T-t) = VaR_{\alpha}(T-t) - EL(T-t) \tag{13}$$

UL estimates are more sensitive to the shape of the loss distribution than EL, due to the low probability of extreme losses. Losses in excess of UL are commonly denoted as extreme losses with cumulative density $1 - VaR_{\alpha}(T-t)$ which is also frequently referred to as residual risk "in the tail".

The regulatory capital requirement (or Capital-at-Risk) is the sum of expected loss (EL) and unexpected loss (UL) for a one year holding period and a 99.9 percent confidence interval. In other words according to the Committee the bank must be able to demonstrate that the risk measure used for regulatory capital purposes reflects a holding period of one-year and a confidence level of 99.9 percent. The Committee proposes to define the Capital-at-Risk (CaR) as the "unexpected loss", given by:

$$CaR_1(\alpha) = inf\{x \in R|F(x) \geq \alpha\} - \int_0^{\infty} xf(x)\,dx \tag{14}$$

The total loss L of the bank is then the sum of aggregate losses for each business line x loss type class. Let H be the number of classes (where H = 7x8 in the Basel II context). Therefore:

$$L = \sum_{h=1}^{H} L_h \tag{15}$$

where L_h is the aggregate loss corresponding to the h class.
The rare incidence of severe operational risk losses, however, does not mesh easily with the distributional assumptions of conventional VaR. The fat-tailed behaviour of operational risk defies statistical inference that characterizes loss severity, therefore conventional VaR is a rather ill-suited concept for risk estimation and warrants adjustments that explicitly account for extremes at high percentiles. The development of internal risk measurement models has led to a spread consensus that generalized parametric distributions, such as the g-and-h distribution or various limit distributions under *extreme value theory* (EVT), can be applied to satisfy the quantitative AMA standards for modelling the fat-tailed behaviour of operational risk under LDA (see Embrecht, Kiauppelberg, and Mikosch (1999) for a detailed mathematical treatment, also Reiss and Thomas (2001), Vandewalle et al. (2004), Stephenson (2002), and Coles et al. (1999) for additional information on the definition of EVT). EVT is a particularly appealing statistical concept to help improve LDA under AMA, because it delivers a closed form solution of operational risk estimates at very high confidence levels without imposing additional modelling restrictions if certain assumptions about the underlying loss data hold.

The multivariate extreme value distribution can be written as $G(x) = exp\left\{-(\sum_{i=1}^{n} y_i)A\left(\frac{\frac{y_1}{\sum_{i=1}^{n} y_{1,\dots,}y_n}}{\sum_{i=1}^{n} y_i}\right)\right\}$ for $x = (x_1, \dots, x_n)$ where the i-th univariate marginal distribution $y_i = y_i(x_i) - \left(1 + \xi_i \frac{(x-\mu_i)}{\sigma}\right)^{-\frac{1}{\xi_i}}$ is generalized extreme value, with $1 + \xi_i \frac{(x-\mu_i)}{\sigma} > 0$, scale parameter $\sigma_i > 0$ location parameter μ_i, and shape parameter ξ_i. If $\xi_i = 0$ (*Gumbel* distribution), then yi is defined by continuity. The dependence function *A(.)* is defined on simplex $S_n = \{\omega \epsilon R_+^n : \sum_{i=1}^{n} \omega_i\}$ with $0 \leq \max(\omega_{1,} \dots, \omega_n) \leq A(\omega) \leq 1$ for all $\omega \ = (\omega_1 \dots, \omega_n)$.

GEV and GPD are the most prominent parametric methods for the statistical estimation of the limiting behaviour of extreme observations under EVT. GPD is an exceedance function that measures the residual risk of a sequence of extremes beyond a predefined threshold for regions of interest, where only a few or no observations are available (Vandewalle et al., 2004). Balkema and de Haan (1974) and Pickands (1975) state that, for a broad class of distributions, the values of the random variables above a sufficiently high threshold U follow a Generalized Pareto Distribution (GPD) with parameters x (the tail index) and b (the scale index, which is a function of U). The GPD can thus be thought of as the conditional distribution of X given $X > U$ (see Embrechts *et al.*, 1997, for a comprehensive review). Its probability distribution function (pdf) can be expressed as:

$$F(y; \xi, \beta) = 1 - \left(1 + \frac{\xi}{\beta} y\right)^{\frac{-1}{\xi}} \tag{16}$$

where the "threshold excess" y is simply the difference x-U.

The Weibull, Gumbel and Frechet distributions can be represented in a single three parameter model, known as the Generalised Extreme Value distribution (GEV). GEV identifies the possible limiting laws of the asymptotic tail behaviour associated with the order statistics of i.i.d. normalized extremes drawn from a sample of dependent random variables. Its pdf can be expressed as:

$$G(\xi,\alpha,\sigma)\begin{cases}\exp\left(-\left(1+\xi\left(\frac{x-\mu}{\sigma}\right)\right)^{\frac{1}{\xi}}\left(1+\xi\left(\frac{x-\mu}{\sigma}\right)\right)>0,\xi\neq 0\right)\\ \exp\left(-\exp-\left(\frac{x-\mu}{\sigma}\right)\right)\quad x\in R,\xi=0\end{cases} \tag{17}$$

The *Peak-over-Threshold* (POT) method is the most popular technique to parametrically fit GPD based on the specification of a threshold, which determines how many exceedance shall be permitted to establish convergence of asymptotic tail behaviour between GEV and GPD. Alternately Degen et al. (2006) proffer the *g-and-h* distribution as another generalized parametric model to estimate the residual risk of extreme losses. The g-and-h family of distributions was first introduced by Tukey (1977) and represents a strictly monotonically increasing transformation of a standard normal variable Martinez and Iglewicz (1984) show that the g-and-h distribution can approximate probabilistically the shapes of a wide variety of different data and distributions.

The loss distribution for a certain loss type is characterized by frequency and severity. The frequency distribution describes the number of losses up to time *t* and is represented by a counting process *N*(*t*). The most popular distribution is the Poisson distribution. In the simplest case the aggregate loss up to time *t* simply follows a compound Poisson process of the form:

$$Y_t(x)=\sum_{t=1}^{L}\quad\sum_{r=1}^{N_l(t)}x_{\tau,r} \tag{18}$$

and is generated by adding up severities $x_{\tau,r}$ of all loss types $l=\{1,\ldots,L\}$ over time τ up to *t*.

WHAT HAS WORKED AT ALL

Institutions face many modelling choices as they attempt to measure operational risk exposure. In order to understand the inherent nature and exposure of operational risk that a financial institution faces, we analyze various approaches that could be used to measure operational risk under the *Loss Distribution Approach* (*LSA*). The LDA has three essential components, a distribution of the annual number of losses (frequency), a distribution of the amount of losses (severity), and an aggregate loss distribution that combines the two.

Frequency distribution and aggregate loss distribution: For short periods of time, the frequency of losses is often modelled either by a homogenous Poisson or by a (negative) binomial distribution. The choice between these distributions may appear important, as the intensity parameter is deterministic in the first case and stochastic in the second (see Embrechts *et al.*, 2003). However, as the prudential requirement involves measuring the 99.9% OpVaR over a yearly period, this issue is only marginally relevant: Chapelle et al. (2005) evidence suggests that the mere calibration of a Poisson distribution with constant parameter *l* corresponding to the average number of observed losses during a full year provides a very good approximation of the true frequency distribution.

Modelling Severity: One of the most significant choices is which technique to use for modelling the severity of operational losses. There are many techniques being used in practice, and for policy makers an important question is whether institutions using different severity modelling techniques can arrive at very different (and inconsistent) estimates of their exposure. There is no commonly agreed-upon definition of what constitutes a heavy-tailed distribution. However, one such definition can be based upon a distribution's maximal moment, which is defined as *sup* $\{r : \mathrm{E}(x_r) < \infty\}$. Therefore , the majority of the distributions used in finance and actuarial sciences can be divided into these three classes, according to their tail-heaviness: first, light-tail distributions with finite moments and tails, converging to the Weibull curve (Beta, Weibull); Second, medium-tail distributions for which all moments are finite and whose cumulative distribution functions decline exponentially in the tails, like the Gumbel curve (Normal, Gamma, LogNormal); third, heavy-tail distributions, whose cumulative distribution functions decline with a power in the tails, like the Frechet curve (T-Student, Pareto, LogGamma, Cauchy).

To model the severity distribution, K. Dutta and J. Perry (2006) review two different techniques: parametric distribution fitting and Extreme Value Theory (EVT). In parametric distribution fitting, the data are assumed to follow some specific parametric model, and the parameters are chosen (estimated) such that the model fits the underlying distribution of the data in some optimal way. EVT is a branch of statistics concerned with the study of extreme phenomena such as large operational losses. Jobst (2007) parametric risk estimates of i.i.d. normalized maxima at the required 99.9th percentile implied capital savings of up to almost 97% compared to a uniform measure of operational risk exposure.

According to P. de Fontnouvelle et al. (2004) loss data for most business lines and event types may be well modelled by a Pareto-type distribution, as most of the tail plots are linear when viewed on a log-log scale. Second, the severity ranking of event types is consistent across institutions. Clients, Products and Business Practices is the highest severity event type, while External Fraud and Employment Practices are the lowest severity event types.

It is commonly accepted that lognormal and Weibull distributions fit operational loss data reasonably well over a large part of the distribution but can diverge in the tail due to underestimation of large sized losses. Conversely applying a Pareto distribution to the data gives a good fit to the tail (where there is sufficient data to allow this judgement) but a less good fit elsewhere. The ideal which we would seek is therefore to choose a distribution that performs well in the tail but also uses some of the better quality information available at smaller loss values to inform tail behaviour. J. Gustafsson, et al. (2008) aim to show that the GCD has the potential to be a good estimator across the full dataset. Chapelle et al. (2005) establish that the Generalized Champernowne Distribution (GCD) demonstrates a great flexibility and is therefore an appropriate choice for the severity side in LDA on operational risk data. The reason for investigating is that the GCD has an interior maximum that resembles a lognormal distribution and converges asymptotically to a Pareto distribution for extreme losses. This is a favourable feature when modelling operational losses. In the papers by Buch-Larsen et al (2005), Gustafsson et al (2006) and Guillen et al (2007) it is assumed that this distribution is more flexible and therefore more appropriate than the common lognormal or Weibull distributions.

Gustafsson, et al. (2008) considers the question of the appropriate severity distribution estimators for Loss Distribution Analysis (LDA) of operational risk data. They compare the performance of four severity distributions. The capital requirements when using the GCD (both for VaR 99.5% and TVaR 99.5%) is right between the capital requirements when using the light tailed distributions (lognormal and Weibull) and heavy tailed Pareto. This leads authors to conclude that the GCD is suitable for use in LDA, its three parameter configuration making it more flexible than other estimators in this study and therefore better at capturing the whole of the data generating distribution.

Jobst (2007) identified GEV, GPD, and the g-and-h distribution as feasible measurement approaches to assess the generalized parametric specification of the fat-tailed limiting behaviour commonly associated with large operational risk losses. In their effort to derive a consistent measure of operational risk across several U.S. banks, Dutta and Perry (2006) find that GPD tends to overestimate UL in small samples, contending its adequacy as a general benchmark model. To evaluate how well the model fits the observed loss data, J.M. Netter and A.B. Poulsen (2010) calculate Quantile-Quantile plots for both the OpRisk Analytics and OpVantage databases. These plots compare the predicted quantiles of the fitted loss distributions with the actual quantiles of the empirical loss distributions. The fit of both Quantile-Quantile plots does deteriorate towards the tail of the loss distribution. Overall, the results based on U.S. data indicate that the logit-GPD model provides a good estimate of the severity of the loss data in external databases. In addition, the estimated loss severity is quite similar for the two databases examined.

Jobst (2007) found that AMA-compliant risk estimates of operational risk under both EVT and the g-and-h distribution generated reliable and realistic estimates of UL. More, in a simulation study of generic operational risk based on the aggregate statistics of operational risk exposure of U.S. banks, both GPD and GHD generate reliable and realistic AMA-compliant risk estimates of UL. In the effort to curb parameter uncertainty of GPD, they introduced the concept of the "threshold-quantile surface" as an integrated approach to illustrate the contemporaneous effect of the threshold choice, the estimation method, and the desired statistical confidence on the accuracy of point estimates and upper tail fit. Author found that the selection of the right percentile level rather than the threshold choice seemed to matter most for robust point estimates of aggregate operational risk. Estimation uncertainty increased significantly at high levels of statistical confidence beyond the 99.7th percentile or threshold quantiles that classified less than 0.5% of all losses as exceedances for the parametric GPD-based upper tail fit. More the GHD distribution outperformed both GEV and GPD in terms of the goodness of upper tail fit. In fact, the g-and-h distribution *underestimated* actual losses in all but the most extreme quantiles of 99.95% and higher, when EVT-based estimates *overstated* excess elongations of asymptotic tail decay. Authors' findings suggest a symbiotic association between EVT and the g-and-h distribution for optimal point estimation depending on the percentile level and the incidence of extreme events. Moreover parametric risk estimates of i.i.d. normalized maxima at the required 99.9th percentile implied capital savings of up to almost 97% compared to an uniform measure of operational risk exposure.

De Fontnouvelle et al. (2004) fit a set of distributions to the LDCE (*Loss Data Collection Exercise*) data via Maximum Likelihood. In general, the heavy-tailed distributions (Burr, LogGamma, LogLogistic, Pareto) seem to fit the data quite well. The reported probability values exceed 5% for many business lines and event types, which suggests that we cannot reject the null that data are in fact drawn from the distribution under test. Moscadelli (2004) shows that the Extreme Value model, in its severity representation (Peaks Over Threshold-Generalised Pareto Distribution, POT-GPD), provides an accurate estimate of the actual tail of the BLs at the 95th and higher percentiles; this is confirmed by the results of three goodness-of-fit tests and a severity VaR performance analysis. In light of its supremacy in the estimate of the loss tail-severity distribution, the Extreme Value model, in its Peaks Over Threshold - Point Process representation (POT-PP), is also used to estimate the loss tail-frequency distribution, that is to derive the probability of occurrence of the large losses in each BL. Owing to the higher frequency of losses, *Retail Banking* and *Commercial Banking* are the BLs which absorb the majority of the overall capital requirement (about 20 per cent each), while *Corporate Finance* and *Trading & Sales* are at an intermediate level (respectively close to 13 per cent and 17 per cent) and the other BLs stay stably under 10 per cent. Moreover, the results show the very small contribution of the expected losses to the total capital charge: on average across the BLs, they amount to less than 3 per cent of the overall capital figure for an international active bank, with a minimum value of 1.1 per cent in *Corporate Finance* and a maximum of 4.4 per cent in *Retail Banking*. Moreover, one of the main remarks coming out of this paper is that, if the aim of the analysis is to estimate the extreme percentiles of the aggregated losses, the treatment of these two components within a single overall estimation problem may reduce the estimate error and the computational costs. As the paper makes clear, the EVT analysis requires that specific conditions be fulfilled in order to be worked out, the most important of which are the i.i.d. assumptions for the data.

Also Hübnera, et al. (2005) find a reasonable statistical fit using the EVT POT method for most of the institutions. However they show that good fit does not necessarily mean a distribution would yield a reasonable capital estimate. This issue is especially of concern for the EVT POT approach, which gave the most unreasonable capital estimates with the most variation of all of the methods across the enterprise, business line, and event type levels. Also, the capital estimates for these institutions are highly sensitive to the threshold choice. With respect to the capital estimates at the enterprise level, only the g-and-h distribution resulted in realistic, consistent and least varying capital estimates across institutions at the enterprise, business line, and event type levels. In the paper it shows that the g-and-h distribution results in a meaningful operational risk measure in that it fits the data and results in consistently reasonable capital estimates. More, in spite of many researchers have conjectured that one may not be able to find a single distribution that will fit both the body and the tail of the data to model operational loss severity; the g-and-h distribution imply that at least one single distribution can indeed model operational loss severity without trimming or truncating the data in an arbitrary or subjective manner.

OR Approaches

Jobst (2007) evidence from a cursory examination of balance sheet data of U.S. commercial banks suggests a significant reduction of economic capital from AMA-based self-assessment of operational risk. The standardized measure of 15% of gross income under BIA and TSA of the New Basel Capital Accord would result in a capital charge that grossly overstates the economic impact of even the most extreme operational risk events in the past, such as the physical damage to assets suffered by the Bank of New York in the wake of the 9/11 terrorist attacks.
Sundmacher (2004) show that a financial institution that initially uses the BIA might only marginally benefit from moving to the next higher approach, the TSA. The benefits accruing from a lower capital charge might be offset by the compliance costs associated with the fulfilment of Basel's qualifying criteria for the TSA. Further, the capital-saving in the TSA compared to the BIA will be highly dependent on the business units in which the financial institution generates the bulk of its Gross Income.

The objective of Mongid's paper (2009) is to estimate operational risk capital charge using historical data for 77 rural banks in Indonesia for a three-year period, 2006 to 2008. The study uses three approaches: (i) Basic Indicator Approach (BIA), (ii) Standardized Approach (SA) and (iii) Alternative Standardized Approach (ASA). He found that the average capital charge required to cover operational risk is IDR 154 million (1.5% of asset). When the calculation is conducted using the SA method, he found, on average a requirement of IDR 123 million (1.23% of asset). When the calculation is conducted using the Alternative Standardized Approach (ASA), the capital required was IDR 43 million (0.43% of asset).

A result from the work of Ebnother et al. (2001) is that only a fraction of processes needs to be defined to measure operational risk to a high level of accuracy. Hence, the costs for doing the necessary work to measure operational risk can be significantly reduced if one first concentrates on selecting the important processes. From a practitioners point of view an important insight is that not all processes in an organization need to be equally considered for the purpose of defining accurately the operational risk exposure. Management of operational risks can focus on key issues; a selection of the relevant processes reduces significantly the costs of defining and designing the workflow items (in Ebnother example, out of 103 processes only 11 are needed to estimate the risk figures at a 90 percent level of accuracy). Second, although six risk factors were considered, only 2 of them seem to really matter. Following a similar approach Ebnother et al. (2002) find that 10 processes lead to a VaR of 98% of the VaR calculated from all processes.

Correlation

Sundmacher (2004) empirical findings show that the correlation between two aggregate losses is typically below 5%, which opens a wide scope for large diversification effects, much larger than those the Basel Committee seems to have in mind. In other words, summing up capital charges is in substantial contradiction with the type of correlation consistent with the standard LDA model. It would require allowing frequency and severity to be correlated with one another and within a risk type and business line class, which is a clear departure from the standard LDA model. Author finally proposes the following simplified formula, for the global capital charge:

$$K = EL + \sqrt{\sum_{i,j=1}^{H} \rho_{i,j}(K_i - EL_i) \times (K_i - EL_i)} \tag{19}$$

However, even though this kind of correlation between frequency and severity can make sense in practice, this cannot be done but at the expense of model tractability, and the extended model thus obtained is far out of reach of what current databases and state-of-the-art technology can cope with.
Dependence betweens risks can be modelled either as correlation between frequencies of loss events, or between their severities, or between aggregate annual losses. Frachot et al. (2004) explain that this dependence can be adequately captured in the LDA framework by the frequency correlations, but not by the severity correlations (see also Frachot et al. (2003) for a discussion of this topic). Brandts (2004) directly model the dependence of aggregate losses and propose to use *copulas* in order to combine the marginal distributions of different risk categories into a single joint distribution (see e.g. Genest and McKay (1986) or Nelsen (1999) for an introduction to copulas). In its work he tested 4 families of copulas.

1. The Gaussian copula is naturally related to the Normal distribution. It is expressed as:

$$C_{NORMAL}(u,v) = \Phi_{\rho}\left(\Phi^{-1}(\mathrm{u}), \Phi^{-1}(\mathrm{v})\right) \tag{20}$$

Where Φ_ρ is the bivariate Normal distribution with correlation ρ and Φ is the standard Normal distribution. So, when the marginals are Gaussinan, it produces the multivariate Normal

2. Frank's copula (Frank (1979)) depicts a symmetrical dependence structure. It is expressed as:

$$C_{FRANK}(u,v) = -\frac{1}{\alpha} ln\left(1 + \frac{(\exp(-\alpha u)-1)(\exp(-\alpha v)-1)}{(\exp(-\alpha)-1)}\right), \alpha \neq 0 \tag{21}$$

3. Clayton's copula (Clayton (1978)) models the lower tail dependence. It is given by:

$$C_{CLATTON}(u,v) = max\left([u^{-\alpha} + uv^{-\alpha} - 1]^{\frac{1}{\alpha}}, 0\right), \alpha\epsilon[-1,\infty[\backslash\{0\} \tag{22}$$

4. The Gumbel-Hougaard copula (Gumbel (1960) and Hougaard (1986)) focuses on the upper tail dependence. The bivariate version of this copula has the form:

$$C_{0-h}(u,v) = exp\left(-\left[(-ln\, u)^{\alpha}(-ln\, u)^{\frac{1}{\alpha}}\right]\right), \alpha\epsilon[1,\infty[\tag{23}$$

In Brandts' study, the difference between various copulas is not very significant, probably because of the very low dependence between the business lines under consideration. G.Hübner et al. (2005), aggregated business line (and event types) capital estimates for the g-and-h distribution in two different ways: assuming zero correlation (independence) and comonotonicity (simple sum of individual numbers). They observed that the differences between these two numbers are much smaller than we expected. Also, the diversification benefit of using comonotonicity at the enterprise level was not unreasonably high for the g-and-h distribution. The diversification benefit is much smaller for the summation of capital estimates from event types than from business lines.

Estimation Methods

The MLE method is arguably the most frequently used estimation method in current operational risk capital quantification practice (de Fontnouvelle, Rosengren, and Jordan (2004)). The MLE assigns weights to the observations according to their likelihood. Because of that, the most of the weight gets concentrated in the body of the loss distribution resulting in a poor fitting of the distribution' right tail where the likelihood values are small. The accuracy of the estimates could be improved by exploring alternative estimation methods.

B. Ergashev (2008) compares the performance of four estimation methods, maximum likelihood estimation included, that can be used in fitting operational risk models to historically available loss data. The other competing methods are based on minimizing different types of measure of the distance between empirical and fitting loss distributions. These measures are the Cramer-von Mises statistic, the Anderson-Darling statistic, and a measure of the distance between the quantiles of empirical and fitting distributions. Authors call the last method the quantile distance method. The likelihood statistic is defined as:

$$L(X_\tau|\theta) = \prod_{i=1}^{n} \quad \prod_{j=1}^{N_i(\tau)} f(log X_{i,j}\theta, \tau) \tag{24}$$

The Cramer-Von-Mises statistic is defined as:

$$W^2(\theta) = N(\tau)\int_{-\infty}^{+\infty}[F(x|\tau) - F(x|\theta,\tau)]^2 dF(x|\theta,\tau) \tag{25}$$

This statistic is a measure of "closeness" of the empirical and fitting distributions to each other.
The Anderson-Darling (AD) is another measure of closeness of two distributions. In contrary to the Cramer-Von Mises statistic, this statistic gives more weight to the distance between the tails of the distributions. The AD statistic is defined as:

$$A^2(\theta) = N(\tau)\int_{-\infty}^{+\infty}\frac{[F(x|\tau)-F(x|\theta,\tau)]^2}{F(x|\theta,\tau)\left(1-F(x|\theta,\tau)\right)} dF(x|\theta,\tau) \tag{26}$$

the Quantile Distance (QD) method is based on finding the parameter estimates that minimize the weighted sum of squares of the difference between a set of k quantiles of the two distributions corresponding to the cdf values of $0<p_1<\ldots p_k<1$ .This sum can be defined as:

$$Q^2(\theta,p,\omega) = \sum_{i=1}^{k}\omega_i\,[\widehat{q_\iota} - q(\theta,p)]^2 \tag{27}$$

Where p=$(p_{1,} \ldots \ldots, p_k)$ are the quantile levels, $\omega = (\omega_1, \ldots . \omega_k)$ are the weights, and

$$\widehat{q_\iota} = y_{[n\times p_i]}, q_i(\theta,p) = F^{-1}(p_i|\theta,\tau), i = 1 \ldots .. k \tag{28}$$

are the quantiles of the empirical and fitting distributions.

Ergashev's simulation exercise shows that the quantile distance method is superior to the other three methods especially when loss data sets are relatively small and/or the fitting model is unspecified.

CONCLUSION

Although the application of AMA is in principle open to any proprietary model, the most popular methodology is by far the Loss Distribution Approach (LDA). It is commonly accepted that light-tail distributions fit operational loss data reasonably well over a large part of the distribution but can diverge in the tail due to underestimation of large sized losses. Conversely applying a heavy-tail distributions to the data gives a good fit to the tail (where there is sufficient data to allow this judgement) but a less good fit elsewhere. The ideal which we would seek is therefore to choose a distribution that performs well in the tail but also uses some of the better quality information available at smaller loss values to inform tail behaviour. There is a spread consensus that generalized parametric distributions, such as the g-and-h distribution or various limit distributions under *extreme value theory* (EVT), as GPD and GCD, can be applied to satisfy the quantitative AMA standards for modelling the fat-tailed behaviour of operational risk under LDA.

More, in spite of many researchers have conjectured that one may not be able to find a single distribution that will fit both the body and the tail of the data to model operational loss severity; the g-and-h distribution and Peaks Over Threshold - Point Process representation (POT-PP), imply that one single distribution can indeed model operational loss severity. For what concern estimation methods, while the MLE method is arguably the most frequently used estimation method in current operational risk capital quantification practice, B. Ergashev (2008) comparing the performance of four estimation methods, shows that the quantile distance method is superior on average. Moreover some authors show that only a fraction of processes needs to be defined to measure operational risk to a high level of accuracy. Hence, the costs for doing the necessary work to measure operational risk can be significantly reduced if one first concentrates on selecting the important processes. While other find that the correlation structure between aggregate losses opens a wide scope for large diversification effects, much larger than those the Basel Committee seems to have in mind. We believe that this study contributes to a better understanding of operational risk management, trying to offer instructive and tractable recommendations for a more effective operational risk measurement.

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WHICH SOCIAL CLASSES ARE MORE EXCLUDED FROM FINANCIAL SERVICES IN ITALY?

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ABSTRACT

Previous researches have found that large numbers of households lack basic financial products. Specifically, the financial exclusion phenomenon has been the subject of increasing interest. The literature shows there are many families that do not have a current bank, a building society account, a home contents insurance, savings or access to consumer credit facilities. The aim of this study is to outline the financial exclusion of Italian households, highlighting which social classes are more excluded from social and financial services. Data published by the Bank of Italy concerning a survey on Italian household income and wealth in 2008 is utilized. The study uses a multi-disciplinary approach and analyzed using a multivariate statistical analysis. A multiple correspondence analysis is used to define the determinants of the financial exclusion. Next cluster analysis is used to categorize groups of individuals characterized by similar financial, economic and social analyzed variables.

JEL: E21, G20, G21, C80

KEYWORDS: Financial exclusion, Italian families characteristics, Multivariate Statistical Analysis.

INTRODUCTION

The debate surrounding the social classes that are more excluded from financial services has been the subject of increasing attention (Lee, 2002). Financial exclusion is currently the subject of widespread debate and interest, as those who lack access to even basic financial services are also often excluded in other areas, thus re-enforcing wider social exclusion (FSA, 2000). Financial exclusion has been identified as a multidimensional construct and as a result providing a simplistic definition is somewhat problematic. However financial exclusion can be defined as a situation where a proportion of potential consumers do not have access to, and consequently do not use, mainstream financial services in an appropriate form (Panigyrakis, Theodoridis and Veloutsou, 2002; Claessens, 2005).
The provision of banking and financial services, which are considered socially necessary to customer segments that qualify as marginal, is defined in the "social banking" literature (Anderloni, 2003).

The financial exclusion of individuals is discussed in North America and Europe, particularly in United Kingdom, France, Sweden, Belgium and Germany. Numerous efforts have been made, including through appropriate legislative measures, to spread financial services to traditionally excluded individuals (Kempson, Atkinson and Pilley, 2004; IFF, 2000; Pesaresi and Pilley, 2003).

The aim of this research is to analyze financial, economic and social characteristics of Italian households to identify social classes that could have difficulty accessing financial services. The research uses a multi-disciplinary approach and is developed through the collection and elaboration of data published by the Bank of Italy on the income and wealth of Italian households in 2008.

The data is analyzed through a multivariate statistical analysis. Firstly a multiple correspondence analysis (MCA) is used to define determinants of financial exclusion. Secondly cluster analysis is used to identify some groups of individuals characterized by similar aspects. The remainder of the paper is organized as follows. Section 2 discusses the relevant literature on financial exclusion, section 3 describes the data and the applied methodology, section 4 analyzes the results, while section 5 concludes the paper.

LITERATURE REVIEW

Inaccessibility to financial services is a phenomenon that has different intensity. In developing countries financial exclusion involves almost the entire population, while in industrialized countries it involves a reduced percentage of subjects. Peachey and Roe (2004, p. 4) argued that "the percentage rate of access in poorer developing economies is about equal to the percentage rate of exclusion in richer advanced industrial economies".

Analysis of the financial exclusion phenomenon has been the subject of numerous empirical studies. Honohan (2005) provides a critical analysis of available datasets regarding access to financial services by poor individuals. Devlin (2005) provides a detailed understanding of financial exclusion in the United Kingdom employing a statistic model to test the influences on financial exclusion of a range of different variables. These variables are generally considered beneficial in helping to meet basic consumer needs of money management, protection against unforeseen events, and income and wealth smoothing. Corr (2006) identifies relevant indicators of financial exclusion, summarizes the available data from secondary sources, and presents an overview of the main available financial products to low income consumers in Ireland.

Financial exclusion involves many aspects. Access exclusion is a restriction of access to financial services which may be due to such factors as branch closures or unfavourable risk assessments. Condition exclusion occurs when individuals are excluded from financial services due to conditions attached to the product offering. Price exclusion occurs when certain individuals cannot afford financial offerings. Marketing exclusion refers to overlooking of certain groups by the marketing activities of financial services firms.

It should also be noted that there is a subtle but important difference between financial exclusion and the broader concept of non-use of financial services. Non-use may be due to the various types of exclusion noted above, but it may also be due to voluntary non-use, lack of resources, or lack of need for a particular type of product. In the first case it has been termed self-exclusion (Kempson and Whyley, 1999) and happens when certain individuals choose not use a financial service, despite a need, perhaps due to past refusal, negative word of mouth, confusion, or lack of trust. In the second case the people may have an inherent need to save for the future to provide for themselves and their family but may not have the necessary income to do so. Such a situation does not represent a lack of need or desire to save themselves, but it could characterize an exclusion from resources.

It is perhaps no surprise that the literature has identified some economic, socio-cultural, and demographic trends which may foster financial exclusion. These include the group of individuals left behind in the recent era of economic growth, increasingly referred to as ''the underclass''. In addition, the resultant income growth has been distributed unevenly and there is low income mobility amongst the lowest income groups. There were also significant demographic changes including more single parents and older people living alone, as well as a rise in homelessness, all of which may have further fuelled financial exclusion. More specifically, factors which have been found to impact the level of ownership of various financial services products include: income, employment status, region, race ethnicity, and marital status (Harrison, 1994; Hogarth and O'Donnell, 1999).

Particularly, the profile of the financially excluded people, based on the numerous empirical studies conducted mainly in UK (FSA, 2000) and America (Caskey, 2002), is characterized by some socio-economic aspects that affect non-access to financial services. These aspects can be distinguished for individuals and for families. In fact, we can observe for individuals: low levels of income or high vulnerability levels normally associated with situations of unemployment or employment instability, serious health problems, advanced age, poor education and/or training, status of immigrant and women. While we can observe for families: low income levels, presence of vulnerable individuals, children and elderly, single-parent structure (especially female), geographic residence marginal or depressed areas, social assistance, and not owning the main house.

Thus, there are different factors influencing the level of financial exclusion in various financial services markets in international contexts. In the following sections we identify which social classes are more excluded from financial services in Italy. The financial exclusion phenomenon is quite relevant in Italy, where new types of poverty are developing from the credit access exclusion of some families.

DATA AND METHODOLOGY

The study uses a dataset involving a survey on the income and wealth of Italian households in 2008 published by the Bank of Italy (Bank of Italy, 2010). The data are collected through a questionnaire that is divided into six sections relating to structural population indicators, job activity, payment instruments and savings forms, real estates and debts, consumptions, and assurances.

The sample is composed by 7,977 heads of household, 19,907 individuals of which 13,266 are income earners. Particularly, 4,934 are head of household men while 3,043 are head of household women; 7,687 people have Italian citizenship, while the remainders (290 people) are immigrants. The geographic residence distribution area is equally divided. In the North West (24%), North East (22%), Centre (21%) and South (22%). The remaining 11% of the sample lives in the Islands.

The variables used in the empirical analysis concern: gender, age, nationality, health, education, job activity, geographic living area, house property, possession of bonds, shares, mutual funds, debts for the house purchase, or debts towards family and friends, loan request, possession of a current account, overdraft possibility and income.

The methodology applied is a MCA which provides evidence if some Italian households have difficulty obtaining access to financial services. The technique also shows how Italian households are linked to the financial exclusion phenomenon. So, the additional value of this research to financial studies consists in identifying the characteristics of people which are considered included or excluded from the financial point of view. It is possible to explain the determinants of the financial exclusion by this application. The MCA is an extension of correspondence analysis (CA) (Bolasco, 2004) which involves the analysis of relationships of categorical dependent variables. As such, it can also be seen as a generalization of principal component analysis (PCA) when the variables to be analyzed are categorical instead of quantitative (De Leeuw, 2007).

Technically MCA is obtained by using a standard CA on an indicator matrix (i.e., a matrix whose entries are *0* or *1*). The percentages of explained variance need to be corrected and the CA interpretation of inter point distances needs to be adapted. MCA is used to analyze a set of observations described by a set of nominal variables. Each nominal variable includes several levels, and each of these levels is coded as a binary variable. For example gender (female vs. male) is one nominal variable with two levels. The pattern for a male respondent will be *0, 1* and *1, 0* for a female. The complete data table is composed of binary columns with only one column taking the value "*1*" per nominal variable.

MCA can also accommodate quantitative variables by recoding them as "bins". For example, a score with a range of *-5* to *+5* could be recoded as a nominal variable with three levels: less than *0*, equal to *0*, or more than *0*. With this schema, a value of *3* will be expressed by the pattern *0,0,1*. The coding schema of MCA implies that each row has the same total, which for CA implies that each row has the same mass.

Using MCA it is possible to apply a Cluster Analysis. It deals with the classification of objects into different groups, or more precisely, the partitioning of a data set into subsets (clusters), so that data in each subset (ideally) share some common trait. The goal of this application is to obtain groups of unities characterized by their internal homogeneity and external heterogeneity in relation to specific considered characteristics. Cluster analysis comprises a range of methods for classifying multivariate data into subgroups. By organizing multivariate data into such subgroups, clustering can help to reveal the characteristics of any structure or patterns present (Brian, E., Landau, S. and Leese, M., 2001).

The applied clustering strategy in our study is a mixed strategy which creates a non hierarchical aggregation of partitions using the method of mobile centers and determining so only one partition, with a very high number of provisory clusters. Secondly a hierarchical strategy is applied. Applying this type of methodology it is possible to limit the effects of the primary choices or bonds that both hierarchical and non hierarchical strategies impose to the result of an automatic classification. In this way it observes an increase of the ratio inertia-inter / total-inertia (Bolasco, 2004).

EMPIRICAL RESULTS

MCA puts in evidence two factors that explain 16.2% of the inertia. Evaluating these values we can observe that there is a fable percentage of explained inertia. However, in the study of social phenomena the presence of low value of inertia is validated. In Figure 1 we can note the contribution of the individual modalities of the variables as regards the two factors.

The first factor that we define is "Socio-Economic-Cultural Dimension." The modalities that contribute to its construction are linked in the principal way to education, health, income, job activity and financial condition. In effect, education can be considered a relevant variable by which it is possible to explain the others variables. Particularly, on the positive side of the first factor there are people with low education, elderly, pensioners, with a bad health, and without current accounts.

In the middle area of the two factors, there are people with normal characteristics and with a higher education. It is possible to highlight a third group, in which a good condition as regards the relationship financial opportunities is evident. In effect, they are some simply or independent employers, with secondary school, that have requested a loan to purchase a house, in middle age and with good health; so they can access credit.

At the end of this first factor, in the negative side, opposite to the first situation, there is the group of the upper middle class. They are professional men or managers, with high income and high levels of education; they have easy access to credit, and live in the North East of Italy.

The second factor is defined "Wealth Dimension" because it deals with people without a house property that rent or have the free use of a house, principally they are not of Italian nationality, they are young people, unemployed or, at the most, they are simply workers, with very low income and with debts towards family or friends. They do not have bounds, shares, mutual funds or any bank and post office current accounts. They are the lefts out.

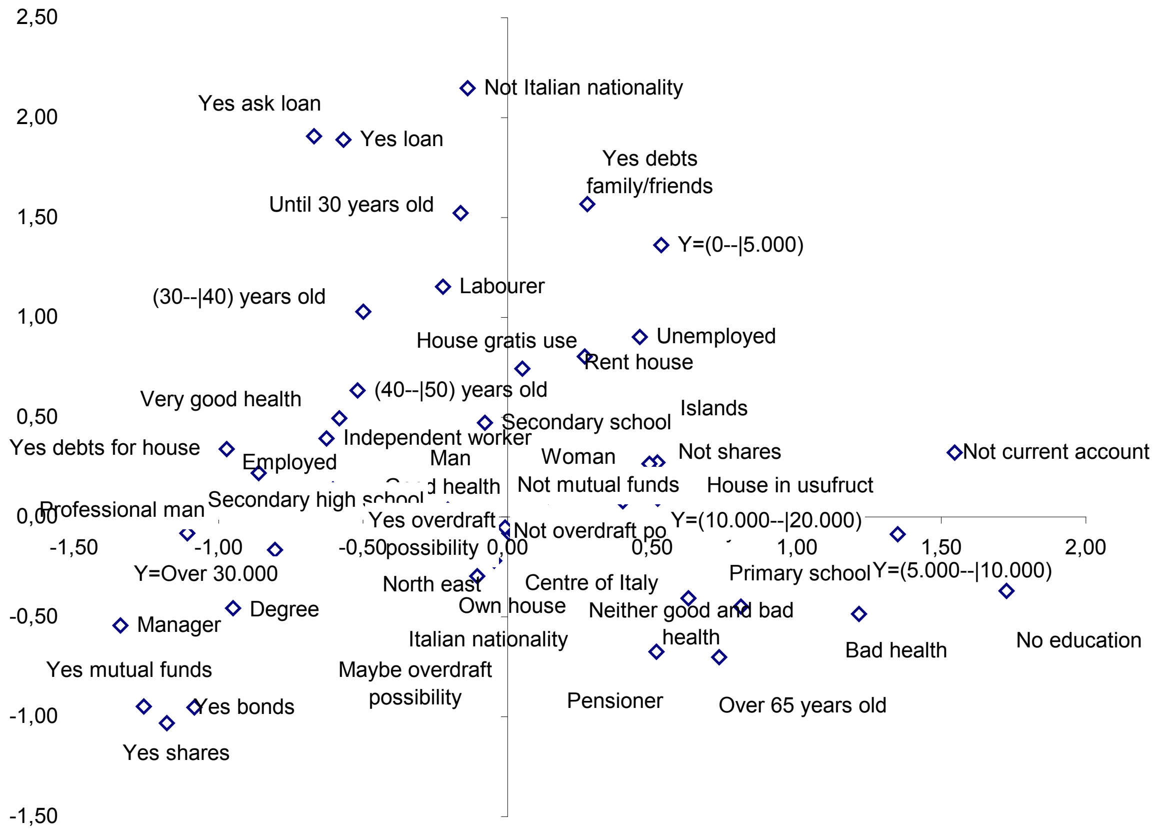
At the end of this exposition, it is possible to note the principal determinants of financial exclusion and to realize these factors are important to a positive improvement of the society. In this way the government can observe where social politics for an improvement of the welfare can be applied.

By the results of MCA and applying the Cluster Analysis (Brian, E., Landau, S. and Leese, M., 2001), it has been possible to identify four different groups of individuals that have particular characteristics as regards the variables analyzed. In this case, the gain of inertia (or variance) inter on the total variance obtained increased from 0.56% to 0.62%. The following group features are:

Cluster 1: *Pensioners – Self excluded*

Among the pensioners included in the total sample analyzed (7,977), 90% falls in this first cluster, from which we can deduce an exclusivity. The group identified represents 31.7% of the sample of households surveyed including 2,530 individuals. They are considered self excluded because they do not show the necessity to have a current account, or to ask for a personal loan or a loan to purchase a house, and they do not have financial investments, as shares, bonds or mutual funds. 42% of these pensioners lives in the North West of Italy, 62.5% is over 65 and about 60% have only completed primary school.

Figure 1: The Italian families characteristics



The figure shows the projection of the modalities of the variables considered on the factorial plane of the MCA.

Cluster 2: *Immigrants – unbanked*

This cluster is composed by 94.5% of non-Italian citizens, rather young with 85% are between 15 and 40 years old. Only 45.9% of them have a secondary school degree, it deals with labourers (82%) or individuals that work in an independent form status (64%). Only 37.3% of them have a current account, and do not have the possibility to invest in financial instruments or to have an overdraft possibility.

Cluster 3: *Females – poor*

This group is connected with women because the entire sample interviewed (57%) fells into this cluster. Specifically, they are not in a good financial condition, in fact 89.5% do not have a current account or investments in shares, bonds and mutual funds. They have an income that ranges between zero and 10,000 Euro, and they do not are in good health (50%) as well.

Cluster 4: *Males – Included and affluent*

This cluster is composed primarily by men that present a good financial condition. 78.3% of all men interviewed are included in this cluster. Specifically, 71.4% of all respondents with an income of over 30,000 Euro belongs to this group of households. 83.6% of them owns mutual funds, 75% bonds, and about 81% has investments in shares. They work as managers (85.6%) or professionals (67%) and have a high educational qualification such as a university degree in 61% of the cases.

CONCLUSIONS

The study highlights that in Italy some people could have a lot of difficulty accessing the financial system. By the application of the MCA methodology we can observe two specific situations in correspondence of the two factors of MCA. On the first axe, we note an "active" position; it deals with people who have the possibility to decide about the financial services or not. On the contrary, on the second axis, we can put in evidence a "passive" position, i.e. the condition of the people that cannot act freely, and are forced to undergo the decisions of other individuals and/or Institutions. They are dependent people.

The clustering allowed observing four different groups of individuals with particular characteristics. The people with low income, in retirement, less educational qualification, a part of an ethnic minority or with migrant background are more financially excluded than others. Female are more excluded from financial services than male.

This study puts in evidence that financial exclusion is largely influenced by the social exclusion. It would be interesting to identify financial instruments that may allow these classes to overcome financial exclusion and to analyze the microfinance market.

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EARLY OBSERVATIONS ON THE QUALITY OF IFRS REPORTS: EVIDENCE FROM TURKEY

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ABSTRACT

Integration of the world economies has mandated the global inception and recognition of IFRS not only for large companies but also for SMEs. We examine wide-ranging real-life IFRS practices experienced in the world while devoting a particular focus to Turkey. We show that although the countries seriously considering the practice of IFRS confronted some severe obstacles, the conduct of IFRS will return the businesses operating in those jurisdictions as significant cost savings.

JEL: M41, M48.

KEYWORDS: IFRS, Financial reporting, Convergence, Harmonization, SMEs

INTRODUCTION

The United Nations Conference on Trade and Development (UNCTAD) signifies the importance of companies' possessing such accounting infrastructures that are (a) promptly responsive to the changes in and (b) all the way prepared for the promulgation of any sophisticated standards. It points that developing countries and the countries in transition yet lack a rigorous foundation to build the International Financial Reporting Standards (IFRS) on. Developed countries that have been long aware of the difficulties of weak accounting system have already construed the advisable infrastructure (UNCTAD, 2008).

The international adaptation process to IFRS actually started in 1973, with the agreement of 16 professional associations across Japan, Mexico, Australia, Canada, Germany, France, Holland, England and the U.S. to build 'International Accounting Standards Committee (IASC)'. IASC was to be named 'International Accounting Standards Board (IASB)' later on. The process accelerated with the introduction of a regulation by 'International Organization of Securities Commissions (IOSCO)' in May 2000 to require all the listed (quoted or publicly held) companies to exercise the IASC standards. The process has been further advanced by the decision of the European Union (EU) in 2002. This decision was geared towards the enforcement of IFRS on rather the consolidated accounts of all the listed companies residing within the EU (UNCTAD, 2008).

Until now, over 110 countries across the globe have acknowledged and started to implement IFRS (Selimoğlu, 2008). The countries that will initiate the enforcement through completing the synchronization with IFRS enclose Japan, India, Korea, the majority of South and Central America as well as Canada (PwC, 2009). It is high likely that one of the most influential transition processes to IFRS will be observed in the U.S. in the foreseeable future (PwC, 2009). At present, although there is not any binding rule yet obliging companies to enforce IFRS in the U.S., many of them consider that the harmonization with (convergence to) IFRS will be soon ensured in absolute terms anyway, and have therefore started to work on this platform already (PwC, 2009). In addition, the process on the harmonization of generally accepted accounting standards in the U.S. (U.S. GAAP) with IFRS is still continuing (PwC, 2009). However, 2016 rather than 2014 is often cited as the anticipated year for the transition to IFRS there (PwC, 2009). Therefore, a considerable amount of time is yet needed for the completion of the transition cycle not only for the developing but for the developed countries as well.

This paper aims to investigate the early observations on the quality of IFRS reports with a particular focus to Turkey. We argue that although the countries seriously considering the practice of IFRS confronted some severe obstacles, the conduct of IFRS will return the businesses operating in those countries as significant cost savings. We present the literature and document the real-life IFRS cases of wide-ranging countries involving Turkey in accomplishing our research objective.

The remainder of the paper is hence organized as follows. The second section provides the recent topical literature. The third section presents the observations on early IFRS reports, involving the relevance of IFRS for SMEs. The fourth section makes recommendations for any improvement in the transition process. And the fifth section concludes the paper.

LITERATURE REVIEW

The transition to IFRS brought up serious debates about the quality of the financial reports prepared under IFRS, particularly in the legal environments with weak enforcement mechanisms (Ball *et al.*, 2003). It is argued that the usage of a common accounting standard set would lead to a greater degree of comparability, transparency, relevance and reliability in financial reporting, which is expected to improve the quality of the reported accounting numbers (e.g. Psaros and Trotman, 2004; Armstrong *et al.*, 2009). On the other hand, it is also argued that since IFRS is a principle-based standard set with minimum implementation guidance, professional judgment will play a considerable role in its implementation. This may raise managerial opportunism issue. Some researchers therefore contend that in case of even little changes in the enforcement mechanisms, the mandatory IFRS adoption would give a rise to a notable decrease in the level of the accounting quality (e.g. Barth *et al.*, 2006; Ahmed *et al.*, 2010).

There is no a single measure yet which could be followed in examining the quality of financial reports. In the literature, the quality of financial reporting has been measured by the proxies such as relevance, earnings management, financial restatements, and timeliness (e.g. Barth *et al.*, 2008; Cohen *et al.*, 2004). These proxies are well recognized quality attributes. Mainly, the quality of financial reporting might be considered as a betterment in the prospects and an improvement in the presentation of the accounting numbers disclosed in the financial reports aligning the reported figures with the actual economic performance of the firm.

Although there are many theoretical and empirical studies on the quality of financial reporting, the arguments and findings of these studies are mixed. In some studies a significant enhancement in the quality of financial reports under IFRS is supported, while no improvement is documented to have been observed in some others. For instance, according to Barth *et al.* (2008), IFRS betters the quality of financial reports in terms of less earnings management, more timely loss recognition, and higher value relevance in voluntary adoption of the standards. Similarly, Christensen *et al.* (2008) conclude that IFRS results in less earnings management and more timely loss recognition in both voluntary and mandatory adoptions. Daske and Gebhardt (2006) show that there is a significant increase in the disclosure quality of Austrian, German and Swiss firms after their recognitions of IFRS.

In addition, Daske *et al.* (2008) document that IFRS brings along higher accounting quality through increasing the liquidity in the capital markets. Prather-Kinsey *et al.* (2008) suggest the improvement of the financial reporting quality under IFRS only for the companies in the jurisdictions with civil laws. The sampled countries had a relatively lower quality accounting regime before their adoptions of the standards. Moreover, Iatridis (2010) points that the implementation of IFRS reinforces the quality of financial reporting through mitigating the information asymmetry and lessening the earnings manipulation. Similarly, Chen *et al.* (2010) show that IFRS promotes the level of accounting quality along with a less earnings management.

In contrast to the above-cited examinations, there are also studies that rather suggest the inappropriacy of IFRS. For instance, Garcia and Pope (2009) conclude that the mandatory IFRS adoption would not provide any significant betterment in the quality of financial reporting without having an effective enforcement mechanism in place. Ahmed *et al.*'s (2010) preliminary findings show that the accounting quality of financial reports prepared in concordance with IFRS may decrease in terms of earnings smoothness, accrual-based earnings management, and timeliness of loss recognition relative to gain recognition.

Similar to Lainez and Gasca (2006), Alali and Cao (2010) document that because of the cultural differences, IFRS might not be applied in all the countries appropriately. The scholars argue that these differences may obviate the comparability of the financial reports to a sizeable degree. They further argue that IFRS is subject to the absence of a common enforcement body. The reason is that once IASB sets the standards it leaves their enforcements to the hands of the national judicial authorities, which may induce severe inconsistencies in their interpretations and exercises among the implementers. Therefore IFRS might not warrant a unique quality in financial reporting in all the countries, at least in equal measures.

Overall, previous empirical studies show that the quality of financial reporting made in accordance with IFRS relies on the other legal constituents to a reasonably high degree. Without having a robust enforcement mechanism, IFRS would fail to provide a high quality financial reporting. This would be particularly the case for the jurisdictions that had suffered from a poor quality accounting system before their inceptions of IFRS. Furthermore, due to other institutional, legal and cultural effects, any betterment in the quality of financial reporting may not be recorded in the same level for all the countries involved. The next section presents the observations on early IFRS reports, involving the relevance of IFRS for SMEs.

OBSERVATIONS ON EARLY IFRS REPORTS

Background: Motivations and Expectations

In order to understand the degree of success in IFRS implementations, various methods have been employed to measure the harmonization of the accounting standards (Çankaya, 2007). These standards serve to project IFRS implementations in a sense (Çankaya, 2007). H-index, I-index, C-index, T-index and C-index (Conservatism Index) are the most well known indices among all (Çankaya, 2007). We will devote our focus to the issues resulting from the practical implementations of IFRS rather than the theoretical considerations. This is because the objective of this paper is to study the early observations of IFRS practices throughout the world, including Turkey. Understanding the motivations driving countries to adopt IFRS is the key to understanding the expectations from IFRS. In this respect, we first present the motivations for and then the expectations from IFRS as follows.

UNCTAD conducts research on uncovering the issues pertinent to the enforcement of IFRS in various territories. One of these focused on Brazil, Germany, India, Jamaica, Kenya, Pakistan, South Africa and Turkey. These countries deserve attention for their individual approaches. For instance, German companies started to prepare their financial statements in accordance with international accounting standards (IAS) in the beginning of 90s. India preferred to adapt IFRS to seize its own economic realities. Kenya considered the implementation of the standards in 1998 while Jamaica started to do so 4 years later, in 2002. Pakistan began to follow IAS as early as 1993. South Africa experienced a similar process in the same year. In Turkey, the transition period can be said to have started in 2003, which might be considered as quite recent (UNCTAD, 2008).

In the above-mentioned countries, motivations inspiring works on the commencement of IFRS vary significantly. For instance, in Germany, convergence to IFRS was rather progressive. Rather than to comply with the dictates by the national regulators, a vast majority of the large companies first started to prepare their financial statements in concordance with IAS, so as to enter foreign markets and thereby to augment their market shares. In other words, without any legal obligation imposed upon them, companies in Germany voluntarily tended to draft their financial reports in parallel to IAS. In 1998, German authorities that were aware of this tendency placed an option to allow the listed companies to prepare their financial statements as compatible with IAS. Thus, in order to encourage the harmonization process, the voluntary implementation of IFRS attained rather a legal identity. Following the EU decision suggesting the enforcement of '2002 regulations' governing IAS, it has become mandatory for the listed firms to prepare their consolidated financial statements in compliance with IFRS. The German case constitutes a nice example to reflect the EU perspective, and reveals the tendency towards IFRS (UNCTAD, 2008).

Other countries or the leading financial institutions in them had various motivations for choosing IFRS. The Brazilian Central Bank for instance was willing to rise investor confidence through the assurance of the firms' comparabilities in the nation. Kenya considered the severe financial crisis it experienced in the 80s and 90s as an opportunity for enhancing the corporate financial reporting quality in the nation. India wanted to apply IFRS for convergence purposes, while Jamaica's aim was to be in congruity with the other Caribbean countries. The essential aim for Turkey, Pakistan and South Africa in exercising IFRS was to warrant the synchronization (comparability) of corporate financial statements across a globally accepted scale (UNCTAD, 2008).

The motivations sorted out so far indeed led the countries to set certain expectations from IFRS. Should an ethical and truly homogenous set of financial reporting standards be established and strictly enforced by the countries across the globe, we expect to have at least six main benefits as follows. First, incremental costs which originate from companies to concurrently operate different accounting practices will be eliminated. These accounting practices feature conflicting or bifurcating prospects. Second, the requirements of the companies to adjust their consolidated financial statements will be removed. This applies to those which either have subsidiaries abroad or are in the position of a subsidiary of a parent company domiciled abroad (İbiş and Özkan (2006) in the Communiqué by Capital Markets Board of Turkey (SPK) at www.spk.gov.tr).

Third, harsh interest costs emanating from the risks associated with the investments may be mitigated. This is particularly the case for the investors and creditors. Fourth, the burden on the translation of the corporate financial statements in compliance with the foreign countries' own accounting practices all the time will be alleviated. This is important for the local businesses that are eager to grow up through obtaining funding abroad. Fifth, (a) the consolidation of the financial statements of multinational enterprises as well as (b) the evaluation on the performance of cross-border operations will be facilitated. Sixth, some obstructive (*ex ante)* barriers on the corporations' engagements of their economic collaborations with the foreign alliances may also be removed (İbiş and Özkan (2006) in the Communiqué by Capital Markets Board of Turkey (SPK) at www.spk.gov.tr).

All the above-mentioned points suggest that the conduct of IFRS will return businesses as cost savings in a wide-ranging spectrum, involving temporal, administrative, technical, managerial or literally monetary dimensions. Some countries seriously considering to practise IFRS confronted however severe obstacles. We present those observed hitherto in enforcing IFRS. For the purposes of typicality, we brand the problem types as institutional, practical and technical issues (UNCTAD, 2008). The next sub-section discusses the institutional issues.

Institutional Issues

Institutional framework might render influential on accounting quality. Paglietti (2009) argues that the degree of the institutional framework could act as a contributing factor in setting accounting quality together with the quality profile of international standards such as IFRS.

We know by experience that, should the definition of the purviews, authorities and responsibilities of different institutions be unclear, or should the coordination mechanism among them not properly work, legal regulations may well overlap, exhibit inconsistencies or even self-conflict. The lack of the material coherence in the regulating mechanisms causes severe misunderstandings and flaws in the course of IFRS implementation.

Prior research suggests that many legal regulations on corporate reporting became effective considerably earlier than the introduction of IFRS, as were in the cases of Indian Corporate Law issued in 1956, South African Corporate Law issued in 1973, and Turkish Commercial Law issued in 1957. However, as there is no arrangement or amendment made in the given countries' legislations towards the inception of IFRS, it remains still not to have attained any rigorous legal structure or background in those territories. Furthermore, in some countries such as Turkey, as a result of the wordings by the imperative provisions, corporate laws may mandate businesses operating in different industries to prepare different financial statements. Beside the 'legal gap' (unfoundedness) and 'integrity' issues, these lead to a significant incompliance burden for the implementers (UNCTAD, 2008).

Some countries started to make considerable legal arrangements. For instance, In South Africa, in the financial reporting and presentation of the financial statements, progress began on the use of national GAAP recommended by 'Accounting Principles Board' in the nation. The legal foundation the transitioning process relied on was the corporate law which was issued in 1973 and amended in 1992. In Jamaica, although compliance with IFRS was not expressly indicated, companies there were yet obligated to follow GAAP –issued by the 'Institute of Charted Accountants of Jamaica'. The legal foundation the transitioning process drew on was the newly promulgated corporate law having come into force in 1994. This implies that, transition to IFRS was implicitly provisioned in the nation (UNCTAD, 2008).

Indian case also deserves attention. We see that such authorities as 'Indian Capital Markets Board', 'Central Bank' and 'Insurance Regulation and Development Agency' adopted the conduct of financial reporting in accordance with the accounting standards. It is the 'Institute of Charted Accountants of India' which publishes them. This structure suggests the recognition of the mastery by a professional body nationwide. Some hardships persisted despite this pertinent linkage though. For example, the Institute of Charted Accountants of India recently issued a standard on leasing based on the IAS. However, 'Leasing Companies Association' argued that the issued standard will severely harm the leasing operators, and it therefore filed a lawsuit to suspend the enforcement (UNCTAD, 2008).

There are some notable differences, of varying degrees, between the current legislations and even the preceding regulations geared towards the harmonization with IFRS. For instance, IFRS 4 stipulated that insurance undertakings are required to set provisions based on their past experiences in the insurance contracts. However, in the *ad hoc* practices, we often see that industry or sector averages rather than historical information are used. A similar disparity applies to the banking sector as well, wherein central banks require banks to account for loss provisions given some predetermined proportional values (UNCTAD, 2008).

IFRS was designed for the preparation of general-purpose financial statements and for making financial reporting. However, case studies across different countries highlight a need for the preparation of special-purpose IFRS-based corporate financial statements as well. Without this, an alternative financial reporting set by a certain sector regulator or entity rather than IFRS may bring about some misunderstandings. For instance, in Turkey, the Banking Regulation and Supervision Agency (BRSA) oversees the banking sector, and the accounting standards it sets are followed by the financial institutions, involving not only banks but also the financial holdings (UNCTAD, 2008).

In the case of Pakistan, the Pakistan Central Bank which is the regulating authority for all the banks in the country determines the form requirements banks have to comply with. These requirements govern the financial statements and notes, regardless of whether they are prepared in concordance with IFRS or not. Likewise, in South Africa, legal arrangements made for the (banking and insurance) transactions of banks and insurance undertakings are subject to special framework. The legislations pertaining to these two important legs of the financial sector are different from those belonging to the other industries as are in Turkey (UNCTAD, 2008). The next sub-section discusses the enforcement issues.

<u>Enforcement Issues</u>

In practice, the implementation charge of IFRS may be concurrently given to more than one party involved. For instance, in the case of Germany, ‘Bilanzkontrollgesetz [BilKoG]’ (German Accounting Enforcement Law) which came into force in 2004 presented a bilateral implementation system. One of the legs is ‘Deutsche Prüfstelle für Rechnungslegung [DPR] e.V.’ (German Financial Reporting Enforcement Panel) which consists of 15 professional and industrial associations. The overheads of DPR are covered by the listed companies in Germany. The other leg is ‘Bundesanstalt für Finanzdienstleistungsaufsicht [BaFin]’ (Federal Financial Supervisory Authority). BaFin is such a well endowed supreme board that is entitled to, concurrently, monitor and review businesses running their operations in the banking, insurance or capital markets (UNCTAD, 2008).

The Panel has been developed to meet the specific need for oversight and reconciliation, and thus to serve as an expert body. Its role is to audit the consolidated and solo financial statements of the listed companies. It may directly report to BaFin in the case of an unsolved issue in regard to the business under review. An interesting aspect of this tiered administrative arrangement is that, while private sector organizations might also give an opinion on a subject that requires rather a considerable technical expertise, the ultimate responsibility to implement the course remains in the hands of a public authority (UNCTAD, 2008).

In the case of India, the Institute of Charted Accountants plays an active role in reinforcing the implementation of financial reporting of the companies in the nation. This institute developed a specialized sub-committee named ‘Financial Reporting Review Board’. The Board examines financial statements belonging to different companies as well as striving to synchronize their financial reports with the accounting standards. Should the board determine any caveat either in the compliance with the accounting standards or in any other implementation issues, it informs its supervisory body (the Institute) or directly refers the matter to another concerning venue (UNCTAD, 2008).

In the case of South Africa, ‘GAAP Review Panel’ operates as the institution in charge entitled to and responsible for assuring the harmonization of financial reporting standards. The Panel features a collective prospect, because it is composed of the Institute of Charted Accountants of South Africa and Johannesburg Stock Exchange. Before this panel, there was actually no legitimate basis for the financial reporting standards (UNCTAD, 2008). The next sub-section discusses the technical issues.

<u>Technical Issues</u>

The most serious imperfection in the implementation of IFRS perhaps lies in the absence of the accountants and auditors who are able to practice IFRS along with IAS. For instance, in the case of

Kenya, although the effective date of IAS coming into force goes back to 1999, the number of the accountants available to conduct them has remained too far from adequate. IFRS training is not only required in Kenya but all over the world. It seems that, training issue would be severely distressing in Turkey, too (UNCTAD, 2008).

Another technical problem is the fundamental and frequent amendments in the existing IFRS, and expecting the implementers to have an immediate accommodation of these changes. For instance, while Kenya and India were trying to internalize IFRS on one hand, they had to once baffle with an IASB decision requiring amendments in 13 different standards. As a result, over 20 standards have been permanently impacted. Considering the limited financial resources, the modifications on IFRS put an unnecessary pressure on the technical capacity. That these amendments may have to pass through a separate process before becoming binding across the nations/regions further spoils the emerging technical issue. In this context, the 'Institute of Charted Accountants of Pakistan (ICAP)' gave a binding resolution. It suggested that, should any standard once be adopted by the Institute and approved by the Securities and Exchange Commission (SECP), unless otherwise stated, IASB shall not need the approval of any further authorization for the amendments it may undertake on the issued standard later (UNCTAD, 2008).

Another technical problem is how to measure the fair value mentioned in IFRS. IFRS considers the fair value as an indicator fundamental to the preparation of the financial statements. As the Indian and Kenya cases apparently indicate, in the countries where the trade volume is relatively low and the liquidity of the capital markets is inadequate, it will be difficult to obtain such a fair value that is recognized by all the transacting parties involved. These concerns could impact not only the preparers but the auditors. As a matter of fact, auditors have already encountered severe problems in the identification of the fair value from time to time (UNCTAD, 2008).

In the case of Germany, the classification (presentation) of the financial instruments that are issued in compliance with IAS 32 (e.g. buyback right) relies on German internal legislation (e.g. Handelsgesetzbuch [HGB]). HGB, the German Commercial Code, stands at the very center of the German GAAP. Should the financial instruments be classified as compatible to IAS 32, some of the accounting items -those normally to be treated as equity by German GAAP- will rather appear as liabilities in the corporate balance sheets. This will increase the share of debt financing while reducing the share of the equity financing in a corporate balance sheet prepared in accordance with IFRS. Therefore, many German firms feel already discouraged from implementing the referred standard, despite the legitimacy of the presentation of the financial instruments (UNCTAD, 2008).

A similar issue has arisen in the course of the implementation of IAS 17. IAS 17 governs leasing transactions. In particular, such institutions as banks and insurance undertakings that cover a great volume of financial service needs were forced to redefine some leases as operational, so as to assure synchronization with the standards. One of the considerable drawbacks of the redefinition is, once again, the reduction in the degree of equity which plays a key role in the capital adequacy regulations [e.g. the degree of capital adequacy ratio] (UNCTAD, 2008).

Technical issues are not even restricted to the above-mentioned problems. For instance, IAS 16 which stipulates the treatment of fixed assets favors a component approach rather than full depreciation. This approach implies a totally new experience for the wide-ranging practitioners who used to make financial reporting based on the consummation of the entire value of the fixed worth. A great deal of highly technical consulting service may therefore be needed, in figuring out for example how to (i) depreciate fixed assets through partitioning them and hence to (ii) diminish their book values in connection with a pro-rata basis (UNCTAD, 2008). The next sub-section discusses the issues that are of particular relevance to Turkey.

Issues That Are of Particular Relevance to Turkey

We see that different firm types are governed by different authorized bodies, and more importantly, under different legislations in Turkey. For instance, insurance undertakings are administered by the Undersecretariat of Treasury (UTT). They are audited for their insurance-related operations by the Insurance Supervision Board (ISB). Banks or financial companies (e.g. factoring firms, leasing firms) are mainly reviewed by BRSA for their ordinary activities. However, in case a particular insurance undertaking, bank, or financial company is publicly listed, it will be also subject to the review by the Capital Markets Board (CMB) for its capital markets-related operations. BRSA and CMB are the supreme boards with autonomies in their jurisdictions, while ISB acts as a body of UTT.

CMB performs the execution charge -monitoring and oversight- at the crossroad of rendering the harmonization of the listed companies with the financial reporting standards. More clearly, CMB is entitled to regulate, monitor and supervise the companies that are publicly held, and/or whose stocks are traded in the stock markets along with IFRS.

Companies that are publicly owned but whose stocks are not traded in the market are governed by Communiqué XI/No.1 along with its amendments. This communiqué is known as 'old standards' as they are not compatible with IFRS. Companies that are publicly held and whose stocks are publicly traded are subject to Communiqué XI/No.25 and its amendments. This communiqué can be pronounced as 'new or current standards' as they are largely compatible with IFRS. Communiqués become effective once published in the official gazette. CMB governs not only the issue, but also the conduct of these regulations. Table 1 presents the reporting requirements of companies operating in Turkey (UNCTAD, 2008).

Table 1: Reporting Requirements of Various Companies Operating in Turkey

Type	Code
Companies that are publicly held but not traded in the stock exchange	Communiqué XI/No.1 & its amendments by Capital Markets Board (known as old standards)
Companies that are both publicly held and traded in the stock exchange	Communiqué XI/No.25 & its amendments by Capital Markets Board (known as new standards)
Brokerage firms (investment houses)	Communiqué XI/No.25 & its amendments by Capital Markets Board (known as new standards)
Banks and financial institutions with similar capacities	Turkish accounting standards
Insurance undertakings	Communiqué by Undersecretariat of Treasury

Source: adapted from UNCTAD (2008, p.136).

Table 1 points to the persisting institutional problem (e.g. overlap of powers/legislations, lacking coordination, inconsistency) mentioned before. The conflict (dichotomy) between the two above-mentioned communiqués by CMB alone raises technical issues too. We can break them into two: disclosure and measurement problems. We will first discuss disclosure matters as follows.

First, in IFRS/IAS (new communiqué), related (associated) parties are meant to include a broad stakeholder group, while in the old communiqué, related parties are particularly referred to as subsidiaries, equity investments and stockholders. Second, unlike IFRS/IAS, old communiqué does not obligate any disclosure on the fair value of financial assets and liabilities excluding marketable securities. Third, unlike IFRS/IAS, the statement of shareholders' equity is not a mandated financial statement by the old communiqué. Fourth, in IFRS/IAS, cash flows are detailed by activity type in the cash flow statements, while there is no such a classification in the old communiqué (UNCTAD, 2008).

On measurement or valuation, there are certain differences between the new and the old communiqués as follows. First, unlike IFRS/IAS which treats foreign exchange losses emanating from the acquisition of

PPE (plant, property and equipment) as period expenses, the old communiqué treats them as assets through capitalization. Second, unlike IFRS/IAS which treats research and organization costs as period expenses, they are treated as assets through capitalization in the old communiqué. Third, unlike IFRS/IAS, all lease types are treated as operational leases in the old communiqué. Fourth, unlike IFRS/IAS which mandates the companies to consider the present values of the pension liabilities, the old communiqué does not bring out such a covenant as a must (UNCTAD, 2008).

It is the banking law that administers banks and financial holdings with several financial companies in Turkey. BRSA is entitled to audit them as mentioned. Following a resolution by BRSA issued in November 2006, in terms of financial disclosure, banks and financial institutions with similar capacities have started to be codified by Turkish Accounting Standards (TAS). TAS is issued and published by Turkish Accounting Standards Board [TASB] (UNCTAD, 2008). TAS is in the form of literal translations of IFRS into turkish.

Before referring to TAS as the legitimate venue for corporate financial reporting, BRSA used to mandate banks to present their financial statements based on the form requirements set by itself. Therefore, BRSA was indeed the first supreme board to expressly encourage convergence into IFRS. Such practices will surely assure and accelerate the harmonization with IFRS (UNCTAD, 2008).

Obstacles are not restricted to the said issues though. Cultural adaptation of the implementers towards IFRS should not be underestimated for instance. Lainez and Gasca (2006) investigate the role of the cultural effects on the synchronization process within the European Union (EU) territory. The scholars control for valuation and disclosure practices through sampling 150 companies across 15 EU Member States. They document that culture is an influential factor governing convergence towards a common financial information disclosure setup. The findings by the given scholars are also supported by the recent studies (e.g. Alali and Cao (2010)). The next sub-section discusses the relevance of IFRS for Small and Medium-Sized Enterprises (SMEs).

SMEs and IFRS

According to IASB, unlike large-scale firms, SMEs (a) are neither listed nor publicly held, (b) are not built in the form of financial organizations, (c) do not deliver any public services, (d) are not *per se* important in the countries they operate, (e) have no accountability obligations to the public, and (f) are obligated to present general rather than specific-purpose financial statements (Demir, 2007). Thus, by definition, while the users of SMEs' financial statements pay attention to the parameters such as short-term cash flows or liquidity, capital market analysts or investors of the large companies devote their concentrations rather to the financial indicators such as long-term cash flows, dividends or corporate value (Aslan (2007) in Sivaram (2006)). To IASB, IFRS for SMEs would be appropriate for the organizations with a number of staff around 50 (Demir, 2007).

Nonetheless, SMEs, just as large companies, may also be in need of the preparation and reporting of international financial statements. This need could emanate from wide-ranging stances or motivations. Among them are for instance (a) willingness to obtain international loans from banks or other financial institutions, (ii) willingness to maintain relationships with foreign suppliers, (iii) requirements by the credit-rating institutions on (SMEs') having transparent financial statements in concordance with Basel II, or (iv) the structures of SMEs' foreign customer networks (Demir, 2007).

Full-set IFRS has been designed for large corporations. It failed to address to the issues of SMEs however. IASB therefore issued an accounting set, 'IFRS for SMEs', to the public for the particular use of SMEs. Consideration of SMEs was quite a wise breakthrough since they account for the vast majority (% 95) of all the enterprises (TASB, 2009). In other words, every 95 firms out of 100 is SME.

IFRS for SMEs, as the name implies, is a catch-all standard set. It has been prepared considering the particular needs and capacities of relatively smaller businesses (TASB, 2009). In the preparation of this standard set, full-set IFRS was indeed taken as the role model. Particularly, (i) the principles regulating identification as well as recording of asset, liability, equity, expense and income values in the full-set IFRS have been simplified, (ii) the sections that do not directly pertain to SMEs have been precluded from the full-set IFRS, and (iii) the scope of the mandatory disclosures mentioned in the full-set IFRS has been narrowed (TASB, 2009).

Along with the aim to further alleviate the financial reporting burden on SMEs, it has been settled that the revision of the 'IFRS for SMEs' will be made on a triennial basis, rather than interim or annual periods (TASB, 2009). As mentioned, even though 'IFRS for SMEs' was envisaged as a separate vein of standards, SMEs will still have the chance to prepare their financial reports in accordance with full-set IFRS as well, should they prefer or need to do so (Demir, 2007). We see that encompassing the above-specified prospects, work on the harmonization and implementation of IFRS for SMEs is also accelerating in Turkey in full force. The next section points to some lessons to draw from the on-going exercises of IFRS across various countries.

RECOMMENDATIONS FOR IMPROVEMENT

The preceding sections have suggested that a robust enforcement mechanism as well as a concurrent consideration of institutional, practical, technical, legal and cultural constituents are all needed for IFRS to warrant a high quality financial reporting regime for its implementers. Considering the countries with varying economic development levels, the following fourteen points by UNCTAD (2008) are strongly advisable in improving IFRS applications.

First, with the transition plan designated for the convergence to IFRS, its influence over users, preparers, trainers (including academicians) and other beneficiaries should be well managed. Second, the application of IFRS requires a rigorous preparation stage both at macro (country) and micro (company) levels. Training of personnel, updating information technologies, or outsourcing some consultancy services on the maintenance of IFRS are among such emerging issues. The German case suggests that companies are in need of 1 to 1,5 years for a proper execution of IFRS. Third, the complete transition plan should be specified. This plan involves the process *beginning with* the identification of the sizes and the types of businesses reporting their financial statements on solo or consolidated basis *until* the final stage of how to perform IFRS on the spot. Case studies by UNCTAD point that SMEs are already facing hardships even in the preparation of general-purpose financial statements (UNCTAD, 2008).

Fourth, the countries converging to IFRS-based financial reporting may have special requirements, should their economies be under a hyper- or stationary- (chronic) inflation pressure. Fifth, IFRS execution programs should also contract the readiness of the related professional accounting agents, since a successful IFRS conduct would not function without their supports. These acting bodies can offer training programs on IFRS from the early to the advanced stages at every point needed throughout the transition period. Sixth, national accounting firms can contribute to the harmonization of IFRS not only on a national scale but also on an international level. For instance, in South Africa, 'Accountancy Technical Common Forum' which was established to counteract probable inconsistencies defines the technical conditions for financial reporting. Members of this forum have the chance to observe concurrent implementation across the globe. With such approaches, dialogs among all the firms delivering accounting services both at national or transnational levels will considerably increase. And IFRS implementations will feature a systematic integrity (UNCTAD, 2008).

Seventh, a concurrent monitoring program among auditors may provide the proper information flow. This flow is necessary for observing various issues related to reporting financial statements and auditing process. Eight, preparers, users, regulators and professional accounting bodies had better give feedback on IFRS implementation process to IASB which is the worldwide regulating agency. This feedback would not only be of *ad hoc* or *ex post*, but *a priori* character. That is, feedback could not only be given immediately following the finalization of the standards, but even before, when they are just in draft versions. Any proactive interaction with IASB even in the course of the preparation of the standards will breed mitigation on the probable requests for the amendments and/or the comments after the issuance of the standards. Ninth, the incorporation of IFRS and IAS modules into the curricula of accounting programs of universities will shorten the transition period by simplifying the implementation of IFRS. In this respect, coordination of universities' accounting programs together with professional qualifications and professional arrangements is needed (UNCTAD, 2008).

Tenth, the lack of expertise in IFRS will impact not only the private sector, but other institutions and entities delivering public services as well, enclosing the regulators at the foremost. Eleventh, every country is unique. Transition from national GAAP-based reporting to IFRS-based reporting may require clarification or interpretation owing to this uniqueness (e.g. existence of a high degree of unregistered economy in a country such as Turkey). Twelfth, any differences or inconsistencies between *IFRS* which is effective on an international level and *IFRS* which is adapted to a national scale should be avoided. Thirteenth, positive contributions to the process of IFRS would be facilitated if the relevant authorities show inclination to share their enforcement powers. And fourteenth, regional and cross-border development banks may play quite an active and constructive role in the systematic implementation of IFRS through providing necessary fund transfer to the economies of the emerging countries or the countries in transition (UNCTAD, 2008). The next section concludes the paper.

CONCLUDING COMMENTS

Integration of the world economies has mandated the global inception and recognition of IFRS not only for large companies but also for SMEs. This paper aimed to investigate the early observations on the quality of IFRS reports with a particular focus to Turkey. We argued that although the countries seriously considering the practice of IFRS confronted some severe obstacles, the conduct of IFRS will return the businesses operating in those countries as significant cost savings. We presented the relevant literature and documented the real-life IFRS cases of wide-ranging countries involving Turkey in accomplishing our research objective.

We have shown that companies can have considerable benefits with the enforcement of IFRS as follows. First, the degree of the productivity will increase through less reporting costs. Second, the financing/funding needs will be satisfied through risen credibility. Third, the way for more investments will be paved through a reduced amount of risk exposure and hence less funding costs. Fourth, the degree of the profitability will increase through risen credibility, augmented market share and generated synergy. These points purport to be cost savings to the businesses that implement IFRS in their jurisdictions.

We have also shown that there is the possibility of significant inconsistency issues between IFRS and the legislations currently in force in the countries implementing it. These issues might be of wide-ranging characters. We have suggested a number of ways to overcome these emerging problems. These remedies all combine to recommend a strict understanding, recognition, cooperation, coherence and integrity of IFRS within and among the countries that are willing to implement it. Availability of a robust enforcement mechanism as well as a concurrent consideration of institutional, practical, technical, legal and cultural constituents are indeed all needed for IFRS to warrant a high quality financial reporting regime for its implementers.

In the near future, we expect that (a) TAS will apply to any business in Turkey irrespective of their types, and that (b) TASB will be the sole authority for maintaining the standards and overseeing the businesses as for their implementations of the standards in due diligence. We draw our expectations on a concrete basis, the upcoming (draft) commercial code, which is expected to be passed from the parliament and thereby be legalized soon (UNCTAD, 2008).

This paper is not without its caveats. It presents early evidence on the implementation of IFRS across the globe. It might be misleading for instance to conclude on the advantages or disadvantages of IFRS considering quite a limited time span. We need to wait for a reasonably long time to make sure that IFRS will have satisfied our expectations of itself or failed to do so.

The problems encountered and the solutions suggested for the better exercise of IFRS in this paper may corroborate the scholarly studies on the global accounting harmonization. Empirical and applied research on IFRS may provide documentations on the comparability of the particular prospects of IFRS with the legislations remaining in force before IFRS.

We have diagnosed the typical problems experienced so far in implementing IFRS, sorted them out and made several recommendations on how to solve them. In this respect, our paper might also lead the practitioners/implementers to thoroughly review the convergence progress and to further improve it as much as possible by taking the necessary cautions.

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ACKNOWLEDGEMENT

This paper is the extended, largely amended and translated version of the paper that we first presented at XIIIth Turkish Accounting Standards Symposium in Cyprus on November the 19th, 2009, and represented at Muhasebe Gündemi 2010 (The Accounting Agenda 2010) on February the 26th, 2010 in Izmir city of Turkey. We thank all the participants in both the symposia for their contributions.

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CPA'S DUTIES TOWARD FRAUD DETECTION AND REPORTING: TAIWAN REGULATIONS

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ABSTRACT

This paper aims to review CPAs' responsibilities for fraud detection and reporting. It will first explore, through literature analysis and review of Taiwan regulation, the accounting professions' changing stand toward CPAs' responsibilities to detect and report fraud. In addition, Taiwan's existing laws and profession promulgations on CPAs' fraud-related responsibilities will be examined and discussed. Finally, the 2002 US Sarbanes-Oxley Act's impact on Taiwan CPAs' duties in fraud detection and Taiwan government's responses to such duties by expectations gap will be examined.

JEL: M42; M48

KEYWORDS: Auditor's responsibility, fraud detection, auditing regulations, audit profession,

INTRODUCTION

In Taiwan, the series of corporate failures since 2000, notably Chung Shing Bank and Procomp Informatics, is reminiscent of Enron and WorldCom in notoriety. Their collapse due to management's fraudulent or misrepresented financial statements typically occurs within such short period that shareholders have insufficient time to respond, resulting in huge investment losses.

The question naturally arises: Who is to blame? Responsibilities placed by the Taiwan investing public on CPAs over the veracity and accuracy of financial statements have often been far above what the accountant himself deems he can handle. The claim traditionally made by Taiwan accountants is: "Fraud is very difficult to detect." Some insist this ought to be understandable (Cheng, 2004, Liao, 2006). Taiwan corporate businessmen are especially cunning and expert at camouflaging material they do not want you to see, making it virtually impossible for you to implicate them due to lack of direct evidence. But the public asks, "If you are unable to detect fraud, then what do we need you for?" Accountants rebut by contending that business collapse due to company fraud is corporate responsibility, not accountants', because undetected fraud does not equate to audit failure, and accountants only have to answer to audit failure. But from the point of view of financial statement users, their expectations cannot be met, hence the gap persists (Liao, 2006; Ma, 2006a). And this seemingly impossible to eliminate expectation gap fluctuates with ever-changing external conditions- each time a big case involving fraudulent financial reporting erupts, the gap widens. If this gap continues to broaden to the point when public trust buckles, that would signify the start of the breakdown of capital market.

In relation to the audit expectations gap, the CPA's responsibility to detect fraud is probably at its widest when company failures are publicized amid insinuations of fraud and malpractice. This paper focuses upon CPAs' responsibilities for fraud detection and reporting. It will first explore, through historical analysis and review, the accounting professions' changing stand toward CPAs' responsibilities to detect and report fraud. In addition, Taiwan's existing laws and profession promulgations on CPAs' fraud-related responsibilities will be examined and discussed. Finally, the US 2002 Sarbanes-Oxley (hereafter SOX) Act's impact on Taiwan CPAs' duties in fraud detection and Taiwan government's responses to such duties are examined.

LITERATURE REVIEW

An early study made by Lee (1970) suggested that up to the beginning of the 20th century, "undoubtedly fraud detection moved toward the giving of an opinion on the credibility of accounting information. The importance of fraud detection as an audit objective was indeed downplayed, as later auditing literature took the modern approach to an audit, emphasizing more the principle of testing, the desirability of instituting systems of financial and accounting controls within the company, and the overall fairness of the financial statements (Flint 1971; Lee 1970; Humphrey *et al* 1993; Porter 1997).

The banking crisis and corporate frauds during the mid-1970s initiated investigations into CPA's responsibilities in detection and reporting fraud. The Cohen Commission, established in 1974, concluded that an audit should be designed to provide reasonable assurance that the financial statements are not affected by material fraud. This fell rather short of a requirement that CPA should be responsible for fraud (CAR, 1978).

Numerous surveys conducted during the 1970s and 1980s verified the existence of audit expectations gap, that is, the difference in perceptions between the auditors and the users of financial statements. The studies found that auditors were very opposed to added responsibilities for detecting fraud whereas the users held the opposite views (Beck, 1973; Arthur Andersen & Co, 1974; Baron et al, 1977; CICA, 1986; Steen, 1990).

Low and Kurt (1993) surveyed jurors' and auditors' perceptions regarding auditor responsibility to detect fraud. The study found huge divergence of beliefs and expectations between auditors and jurors. Jurors in the study regard the auditor's role as guardian or watchdog, one who should be held responsible when a company fails or when fraud is uncovered after the issuance of a clean opinion. Auditors, on the other hand, perceived that fraud detection is not their major responsibility during an audit.

Detecting and reporting fraud is a significant element in the rendering of audit services and litigation is a possible consequence for auditors who fail to fulfill their responsibilities in this regard. Bonner et al (1998) examine the type of fraud matters in the occurrence of litigation against auditors by comparing three groups of companies with SEC enforcement actions-those with auditor litigation, those with financial reporting and disclosure litigation not involving auditors (other litigation), and those with no reporting and disclosure litigation. The study indicated the auditor bears the legal responsibility and is likely to be sued when a company's financial statements contain a fraud that is commonly occurring or that involves fictitious transactions and events.

Ramos (2003) discussed the auditor's role in fraud detection by referring the new era in auditors' requirements adapted from Fraud Detection—SAS No. 99 Implementation Guide. He compared required audit procedures prior to issuing SAS No. 99 with those in SAS No. 99, and concluded that auditors would enter a much expanded arena of procedures to detect fraud as they implement SAS no. 99. The study findings suggested that auditors are held responsible for the detection of fraudulent financial statements, while the responsibility to prevent and detect all fraud (either employee or management fraud) rests with management of the company.

An auditor should be responsible for his audit failure—an incorrect audit report issuance when he fails to comply with the requirement of auditing standards. Huang (2003) explored the civil liabilities under CPA Act and Securities and Exchange Act (SE Act) from aspects of the financial reports' purposes, the nature and regulation of audit work. He argued that auditors face potential legal liabilities when, without due professional care, they are unable to detect material misstatements in the financial report. The argument is consistent with the generally accepted auditing principles that auditors should be responsible for their negligent performance during an audit. Strengthening the auditor responsibilities does not mean restraining the accountancy profession's development; quite the contrary, it seeks to advance audit quality.

Enron's collapse initiated creation of the SOX Act in 2002, which greatly expanded the responsibilities of public companies and their auditors. SOX influenced the accountancy profession outside the US as well. Studies have been increasingly focused on auditor's responsibilities expected by the users of financial statements. There is still no consensus about the auditor's role, as far as fraud detection is concerned. In a study in Bangladesh, Chowdhury *et al*. (2005) found that a wide expectation gap existed pertaining to fraud and auditor responsibility. In study in Malaysia, Fadzly and Ahmad (2004) uncovered wide expectation gaps and misconceptions about auditing. They found significant support of the existence of an expectation gap, chiefly on issues relating to auditors' responsibilities. Dixon *et al*. (2006) uncovered the existence of a significant expectation gap in Egypt, especially in auditors' responsibilities for fraud prevention and detection.

In Taiwan, well-publicized corporate frauds by Procomp Informatics in 2004, prompted the investing public to demand that government and the accountancy profession take action in response to the big scandal. It appears that the expectation gap would not be narrowed or eliminated. Financial statements users wanted CPAs to have legal duty to detect fraud, such view given muscle from SOX 2002 (Ma, 2006b). Public criticism of the profession's position mounted, and stirred the accountancy profession into activity. It was previously held that responsibilities to prevent and detect fraud firmly rest on company management, not on the CPA of the company. However, companies continued to collapse, substantial fraud continued to occur, and funds continued to disappear. Parliament members were critical, and government threatened regulatory legislation. Mounting public pressure finally brought about changes in legislation and professional pronouncements in Taiwan. The following section discusses the CPA duties in the Taiwan regulations and professional guidelines.

THE CPA'S RESPONSIBILITIES FOR FRAUD AS REGULATED BY LAW AND PROFESSIONAL GUIDELINE: HISTORICAL DEVELOPMENT

Law

Taiwan CPAs were governed by the Ministry of Finance and the Taiwan Securities and Future Exchange Committee (TSFEC) before the FSC has established on July 1 2004. FSC has since taken over the charge of Taiwan CPAs. Three acts are particularly important for Taiwan CPAs, namely: (1) the Companies Act; (2) the CPA Act; and (3) the SE Act.

According to paragraph 64 of the Taiwanese Company Act, the audit of financial statements should be performed by one or more external CPAs. The CPA(s) will be appointed by the general meeting of shareholders. It is mandatory that the CPA is a member of one of Taiwan's CPAs Unions. Under SE Act's Article 36, any company issuing securities under the law should announce to the public and register with the Competent Authority financial statements which have been duly audited and certified by a CPA, approved by the board of directors, and recognized by the supervisory committee. This statutory requirement gives CPAs the preferential right to audit the company's financial statements.

Article 174 of SE Act require CPAs be held responsible for failure to faithfully issue a report or opinion with respect to any material falsehood or error in a financial report, or failure to expressly state a material falsehood or error in a company financial report due to failure to audit in accordance with applicable laws and regulations and generally accepted audit principles.

The CPA Act, introduced in 1945, also sets management and litigation rules for CPAs. CPAs cannot have any improper conduct or violate or neglect his professional responsibilities in the performance of an audit (Article 17). They should perform their service with due professional care. Furthermore, when conducting an audit, CPAs should avoid concealing the financial information which they know to be directly detrimental to the right and interest of interested parties, or making false or improper certification of the financial statements. CPAs are required to issue an audit report on the financial statements which is sufficient to cause injury to the right and interest of his client or interested parties, owing to his undue intent or negligence in the performance of their professional services (Article 24). CPAs who violate any of the requirements ruled in the CPA Act or SE Act or Company Act face one of the following sanctions as a result of the litigation (Article 40 of CPA Act): (1) Warning, (2) Reprimand, (3) Suspension of practice for a period from two months up to two years, and (4) Expulsion.

Auditing Standards

In 1984, Taiwan's Accounting Research and Development Foundation (ARDF) took over the National Federation of Certified Public Accountants Association, which was responsible for the development of the ‘accountancy profession’ and had a number of committees dealing with matters such as education, ethics and peer review before 1984.

ARDF has four committees: Financial Accounting Standards Committee (FASC), the Auditing Standards Committee (ASC), the Accounting System Committee, and the Education and Training Committee (ETC). ASC, resembling the Auditing Standards Board of AICPA in the US, establishes generally accepted auditing standards (GAAS) in Taiwan. The standards-setting process includes problems identification, exposure draft preparation, public hearings, exposure draft revision, and the issuance of standards. Generally, the auditing standards in Taiwan follow those of the US. The ASC has issued both Statements of Auditing Standards (SAS) 14 (1987 issuance) and SAS 29 (1996 issuance), which regulate CPA responsibilities for fraud detection, reporting and prevention.

The objectives of the Taiwanese SAS 14 (TASC, 1987) are: (1) to distinguish the responsibility of detection for fraud from errors which cause material misstatements of financial statements when CPAs conduct an audit, and, (2) to provide guidelines to the CPA regarding the responsibility of considering fraud and error in an audit of the financial statements.

The core concept of Taiwanese SAS 14 is that responsibilities to prevent and detect fraud and errors lie upon company management, however, CPAs should plan and perform their audit works with due care so that material misstatements in financial statements arising from fraud or error can be uncovered. Except as additional service to clients, audit programs and procedures are not designed principally to detect fraud or errors (para. 4). This implies that CPAs should not be held responsible for detecting the occurrence of fraud or error. The reason for planning and performing an audit with due care is merely to reasonably ascertain that the financial statements of the company are fairly presented.

Taiwanese SAS 14 defines ‘fraud’ as intentional misrepresentations of financial statements, and illustrates the errors as unintentional mistaken in financial statements. Table 1 summarizes the illustrations in SAS 14: According to Taiwanese SAS 14, the CPA is not primarily responsible for the prevention of fraud and error. The responsibility rests with management. An audit may however act as a deterrent. Taiwanese SAS 14 states that an appropriate system of internal and accounting controls is management's primary tool to prevent and to detect fraud and error. However, it acknowledges that while such a system reduces the occurrences of fraud and error, it does not eliminate them (para 3).

It is the CPA’s responsibility to perform an audit which will provide reasonable assurance that the financial statements are free from material misstatements. The audit programs should be based on generally accepted accounting standards and an assessment of the risk that fraud or error may cause the financial statements to contain material misstatements. Taiwanese SAS 14 provides a checklist of risk factors to be taken into consideration while compiling the audit program. The suggested risk factors (para 8) are one of the following: (1) questions with respect to the integrity or competence of management, (2) unusual pressures within or on the entity, (3) unusual transactions, and (4) difficulties in obtaining sufficient appropriate audit evidence.

Table 1: Illustrations of Fraud and Errors

Fraud	Errors
(1) falsification or alteration of records or documents	(1) mathematical calculation errors in the underlying records and accounting data
(2) concealment of records or material information on documents	(2) oversight or misinterpretation of facts
(3) suppression or omission of transactions from accounts	(3) misapplication of accounting policies
(4) intentional misapplication of accounting policies	
(5) misappropriation of company assets	

Table illustrations are given in terms of the definition of fraud and errors in the Taiwanese SAS 14 (TASC, 1987)

Although Taiwanese SAS 14 states that the responsibility for preventing and detecting fraud rests with management, it is the CPA's responsibility to design audit procedures based on the risk assessment, to obtain reasonable assurance that misstatements arising from fraud or error are detected which are material to the financial statements taken as a whole. Taiwanese SAS 14 includes no statement about reporting to a third party, or about withdrawal from the engagement.

Taiwanese SAS 29 (TASC, 1996), issued in 1996, deals with the CPA's consideration of laws and regulations in an audit of the financial statements. The number and variety of laws and regulations that may be applicable to an entity can be substantial. It is clear that special knowledge of all applicable laws and regulations is beyond the CPA's normal expertise. Therefore, based on Taiwanese SAS 29, the CPA is not and cannot be held responsible for preventing and detecting non-compliance with laws and regulations. This responsibility rests entirely with management (para 5). An annual audit may act as a deterrent (para 8). With regard to the responsibility of the CPA for the detection of non-compliance with laws and regulations, however, the CPA should obtain a general understanding of the company's legal framework and its articles of incorporation. Furthermore, the CPA should adopt an attitude of due professional care and professional skepticism with regard to the risk of non-compliance. This is particularly applicable to laws and regulations that have a direct impact on the company's financial statements (para 7).

Since non-compliance with laws and regulations may have a material contingent effect on the financial position of the company, it is difficult to entirely exempt the CPA's responsibility in this respect. On the other hand, whether an act of non-compliance constitutes non-compliance in a legal sense is a legal determination by a court or Competent Authority, which is normally beyond the CPA's expertise (para 11). Based on his general knowledge of the company, its industry, and the applicable regulations, the CPA may consider whether legal assistance and advice is needed under the circumstances. Having acquired a general understanding, it is the CPA's responsibility to perform procedures that are helpful in identifying instances of non-compliance with laws and regulations (para 13), such as (1) inquiring of management as to whether the entity is in compliance with such laws and regulations, and (2) inspecting correspondence with relevant licensing or regulatory authorities.

Furthermore, the CPA should obtain sufficient audit evidence about the compliance with applicable laws and regulations having an effect on the determination of material amounts and disclosures in the financial statements. The CPA should have sufficient understanding of such laws and regulations. Finally, the CPA should obtain written representations from management that it has disclosed to the CPA all known actual or possible non-compliance with laws and regulations whose effects should be considered when preparing the financial statements. No other procedures are required with regard to compliance with laws and regulations (para 14, 15 and 18).

If the CPA becomes aware of a possible departure from the law or regulations, he should obtain an understanding of the possible effect of such departure on the financial statements (para 21). Such indications need to be reported to and discussed with the senior management of the company, its Board of Directors, or its supervisory committee (para 26). In the case of a material departure from the law or regulations, the Board of Directors or the supervisory committee needs to be notified without delay. In this case, the CPA needs to consider the effect on the financial statements and on the CPA's opinion.

If the Board of Directors fails to take sufficient remedial action to prevent the future occurrence of material non-compliance with laws and regulations and fails to disclose the results of the departure properly into the financial statements, the CPA needs to inform the successor CPA about the reason for withdrawing from the engagement. If the client's management does not give permission for informing the successor CPA, the CPA should inform the proposed CPA accordingly (para 31).

Recent Development of Professional Promulgations: Taiwanese SAS 43 (TASC, 2006)

On September 1, 2006, Taiwan's ASC, which as mentioned earlier is under ARDF, issued SAS 43- "The CPA's Responsibility to Consider Fraud in an Audit of Financial Statements", effective for audits of financial statement for periods ending on or after 31 December, 2006. Replacing 1987 SAS 14: "Fraud and Error" which has been around for over 20 years, it is now the corporate fraud standard for CPAs in Taiwan.

Rationale : Two types of compromises can severely affect the quality of audit work: impartiality/ independence compromises, and professional compromises. Independence compromises will be addressed by legislation to be covered in the next section. Professional compromises do not always have to do with the individual CPA's educational background or experience, but may be due to deficiencies in established audit standards themselves.

Prior to 2006, SAS 14 is one of two audit standards, the only two in Taiwan, relating to corporate fraud. It has been around for over 20 years. No matter how much Taiwan's corporate enterprises have expanded in scope or complexity, or have undergone how many financial crises, the standards have never changed. In contrast, US/UK has amended their corporate fraud audit standards numerous times. If Taiwan also experienced a similar series of corporate fraud cases as U.S. /U.K., and if US/UK finds it necessary to amend their audit standards, it stands to reason that SAS 14 must also be antiquated for Taiwan. Thus ASC, which as mentioned previously is under ARDF, proceeded in 2005 to revise SAS 14, and on September 1, 2006, issued SAS 43- "The CPA's Responsibility to Consider Fraud in an Audit of Financial Statements", effective for audits of financial statement for periods ending on or after 31 December, 2006. Replacing 1987 SAS 14: "Fraud and Error", it is now the corporate fraud standard for CPAs in Taiwan.

SAS 43 attempts to rectify SAS 14's deficiencies in such areas as fraud definition and CPA responsibilities. Paragraph 2 of SAS 14, in defining fraud as "intentional misrepresentation of financial information", used as illustrations "intentional misuse of accounting principles" and "misappropriation of assets". Yet SAS 43 clearly distinguishes fraud from error and describes the two types of fraud (misstatements resulting from fraudulent financial reporting and misstatement from misappropriation of assets) that are relevant to the auditor.

With regards to CPA responsibilities, SAS 14's Item 4 is even more misleading. It states "... the planning and implementation of audit work is not designed to discover "fraud or error" per se, but (CPAs) should still maintain professional vigilance so that during the audit process, material misstatements of financial information due to "fraud or error" may be discovered".

The "fraud or error" mentioned in the first half of this quote pertains only to that stemming from asset misappropriation. It does not include fraudulent financial statements. Conversely, the "fraud or error" mentioned in the latter half of the quote refers exclusively to fraudulent financial statements and excludes fraudulent asset misappropriation. The same phrase "fraud or error" is used in two different contexts. When dispute arises, CPAs, citing Item 4's front half, claim the audit process is not designed to discover "fraud or error" per se; legal practitioners, on the other hand, cite Item 4's second half and stress that accountants are supposed to maintain an attitude of professional vigilance.

Each side has its own argument basis. Therefore, to settle disputes once and for all, SAS 43 got rid of Item 4 and rephrased CPA responsibility as: "carry out audit work according to GAAS, to reasonably ascertain that financial statements overall contain no material misstatements due to fraud or error"(Item 21 first half), and, "to obtain reasonable certainty, CPA should maintain professional vigilance throughout the entire audit process and entertain the possibility that management may have exercised control override" (Item 22), thus clarifying that while CPA *attitude* should be one of professional vigilance, his *responsibility* goes only as far as certifying whether financial statements overall contained any material misstatements. Besides making CPA responsibility more precise, SAS 43 differs from SAS 14. Table 2 gives the different respects between SAS 43 and 14.

Table 2: The Different Respects in SAS 43 from SAS 14

	Respects	Contents
1	Emphasis shifted from "fraud or error" to just "fraud	Distinguishes error from fraud; defines what constitutes error, material misstatement, and fraud; separates 2 fraud categories: those arising from fraudulent financial reporting and those involving misappropriation of assets.
2	Inherent limitation of fraud detection.	Points out auditor may commit error while auditing financial statement due to inherent limitation of fraud detection.
3	Recognition and revaluation of the risk of material misstatements resulting from fraud	Recognition and preliminary assessment of material misstatements risk, including overall as well as individual item misstatement, especially revenue misstatement risk; also ascertain if risk controls designed by auditee are actually implemented.
4	Interpretation of "professional skepticism"	The attitude for professional skepticism should to be maintained even if auditor, from past experience, deems management and supervisors of auditee to be honest and upright; mechanics of how to accomplish this made more precise.
5	Illustrations of risk factors	In the SAS 43 appendix there are 3 illustrations for handy reference by accountants and CPAs - Fraud Risk Factors Illustration, Audit Procedure Illustration for Material Misstatements Resulting from Fraud, Plausible Fraud Situations Illustration.

This table shows different aspects of Taiwanese SAS 43, clarifying the auditor's responsibilities for fraud. The author of this paper compares and summarizes in this table features from Taiwanese SAS 14 (TASC, 198) and SAS 43(TASC, 2006).

Recent Development of CPA Act Amendment 2007

Rationale : Since its promulgation on June 30, 1945, the CPA Act in Taiwan has undergone nine separate revisions. This notwithstanding, following the rapid development of Taiwan's domestic economy and the concomitant expansion of accountants' official functions and duties, some of its regulations have become anachronistic over the years. Thereupon, improving CPAs' professional environment, bringing CPA specialty and expertise into full play, and raising CPA performance quality - all call for a thorough reexamination and rectification of the CPA Act. Moreover, in an effort to raise overall CPA standards in Taiwan, the Finance Division of the Advisory Committee for Economic Development reached a unanimous decision on August 29, 2001 to invite scholars, experts, and representatives from the business sector, under the auspices of the Treasury Department, to form the so-called "Reform Task Force for Business Enterprises' Robust CPA System".

One significant reform agenda of this task force is precisely the CPA Act amendment draft. The course, direction, and content of this amendment was arrived at through sectional discussions centering around the topic of “Strengthening External CPA Independence & Effectiveness”, with input from both the academic and the business world (Huang and Lin, 2006). Assimilating input from scholars and practitioners, revision goals of the CPA Act amendment were broken up into two categories for closer scrutinized. Table 3 summarizes each goal.

Table 3: Two Goals Revision for CPA Act Amendment 2007

Category	Descriptions
Goal A: Establish desirable CPA practice environment	(1) Introduce accounting corporation structure in response to the development of Taiwan’s capital market, internationalization of business enterprises, and large-scale trend of CPA firms-endowing them with corporation status helps to ensure their interminable operation, and keeps Taiwan in synchronization with international trends. (2) Expand penalty sentencing regulations to forestall CPAs’ reputation being tainted due to offenses committed by a few. The new penalty provisions, patterned after the Security Exchange Act, encompass broader territory ranging from reprimand citation, monetary fines, business closure, to the most serious business establishment permission. (3) Investigation of accounting firms: This provision allows inspector officials from the Financial Supervisory Commission (FSC) to inspect accounting firms’ business and related financial condition. Accounting firms may not dodge, obstruct, or refuse such inspections.
Goal B: Elevation of CPA audit qualities	(1) This amendment added provision that CPAs performing company consulting work or engaged in other non-audit work which could possibly influence CPA independence, may not accept job offers requiring the certification, approval, and validation of corporate financial reports. (2) CPA pre-job training and ongoing professional training is required to raise quality standards and certification skills. (3) CPA business practice suspended if upgrade requirement not met after being notified of deadline by National CPA Association. CPA license registration revoked if business practice not restored after one year’s time.

This table describes the goals of Taiwan CPA Act revision, summarized from CPA Act Amendment 2007.

According to legal regulations and professional promulgations in Taiwan, the auditor has a role to express an opinion on the fairness of the presentation of financial statements, which means the financial statements are free of material misstatement. The auditor also holds the professional responsibility towards the audited companies or the specific groups of users of the financial statements. Table 4 summarizes the foregoing description in the legislation and professional guidelines with regards to the responsibility of auditors for fraud detection.

SOX 2002 IMPACT ON TAIWAN’S ACCOUNTANCY PROFESSION

Influenced by circumstances that led to the passage of SOX, Taiwan’s FSC began to also take a closer look at the string of fraud cases in Taiwan involving publicly listed companies, this self-examination being an attempt to figure out ways of raising CPA audit standards and affecting a robust accountancy system in Taiwan.

As pointed out in the preceding section, one significant SOX reform is to place in the hands of PCAOB the power of regulating standards formerly handled by AICPA. Regrettably, Taiwan accountancy profession today still has not aggressively pursued the idea of employing an outside regulatory agency such as PCAOB to be its supervisor and overseer. It continues to rely for the most part on Taiwan CPA Association’s self-regulatory functions. In fact, one of the highlights of the CPA Amendment Act proposed in 2004 is the fortification of CPA Association’s self-regulating functions through the formation of the “National CPA Federation”, to set standards for implementation of such critical areas as business activity assessment-evaluation, professional ethics & discipline, so that the investing public may be shielded from losses caused by management fraud or audit failure.

In Taiwan, the current audit standards regulating body is still ARDF. As a foundation, ARDF’s limited income derives mainly from selling SAS publications and holding accountant professional training seminars. The pressure of having to seek revenue sources on its own not only hampers ARDF in its standard-setting efficiency, but also renders it ineffectual when it comes to promoting audit standards toward the direction of public good and interest. This is not conducive to the healthy development of Taiwan's accountancy profession. In Sarbox, listing companies share the expenses related to the regulation of accounting and audit standards. Not only is this in keeping with the principle of "users pay, nonusers no pay", the standards so regulated belong to common property and can be freely and widely perused and researched.

Table 4: Summary of Legislation Acts and Professional Guidelines Regarding the Responsibility of Auditor for Fraud

Act/Guideline	Descriptions	Effectiveness
SE Act	(1) CPAs are given the privilege to perform an audit of a company's financial statements. (2) CPAs are held responsible for the failure to issue a report with respect to any material falsehood in a financial report, due to failure to audit in accordance with applicable laws and regulations and generally accepted audit principles.	1968 - Present
CPA Act	(1) Management and litigation rules for CPAs were set in the articles. (2) CPAs were held responsible for their undue intent or negligence in the performance of the professional services.	1945-2007
CPA Act Amendment 2007	(1) CPAs are held liability for their undue intent or negligence during an audit. (2) The CPA's independence is strengthened by adding the clear provisions of non-audit service that CPAs are not allowed to perform for an audit-engaged company.	2007-Present
SAS 14: Fraud and Errors	(1) CPAs should plan and perform their audit works with due care so that the material misstatements in the financial reports can be uncovered. (2) Responsibilities for fraud prevention and detection rest with the management of the company	1987-2006
SAS 29: Consideration of Laws and Regulations in an Audit of Financial Statements	(1) CPAs are not and cannot be held responsible for preventing and detecting non-compliance with laws and regulations. (2) CPAs are required to adopt an attitude of due professional care and skepticism with regard to the risk of non-compliance.	1996-Present
SAS 43: The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements	(1) CPAs have no fully responsibility to detect fraud but their responsibility goes only as far as certifying whether financial statements overall contained any material misstatements. (2) More precise definition of fraud—employee fraud and management fraud—is given. (3) The certain risk factors causing fraud in the audited company need to be evaluated during an audit.	2006-Present

How the U.S. is able to institutionalize and legalize the revenue sources of a non-self-regulating organization such as PCAOB is a lesson Taiwan can learn from. Until that happens, Taiwan accountants will not be able to reap the benefits of such an overseeing agency the way their U.S. counterparts do.

In part inspired by the passage of the SOX Act in the U.S., Taiwan's CPA Act Amendment proposals, aside from improving CPA practice environment through the establishment of CPA corporations and the fortification of CPA associations' structure and functionality, also borrows from SOX such ideas as boosting CPA independence and prescribing severer punishments for CPA faults, while adding its own Taiwan-specific regulations on tightening accountants' professional qualifications and continuing education requirements, and prescribing more stringent penalties for unlicensed practitioners and those engaged in illicit accountancy trades.

Most importantly, the amendment borrows SOX's empowerment of PCAOB to conduct inspections of registered CPA firms. The amendment now allows Taiwan's FSC to send inspectors to investigate these firms' business and related financial condition. Accounting firms may not dodge, obstruct, or refuse such inspections. It is anticipated that the above measures would in the long run bring about a robust practice environment for Taiwan's CPAs, boost CPA firms' interminable operations, raise CPA professional standards, and protect investors' interests, enabling Taiwan to ultimately hook up with U.S. and international auditing standards. However, just like certain SOX sections are more controversial than others (e.g., 404), some provisions of the CPA Act amendment also sparked more debate than others from among Taiwan accounting professionals, which dealt with CPA certification requirements and penalty sentencing. In particular, Taiwan CPA Association board chairman Chen Zhao Shen (Huang, 2003) argued that the service nature of accountants differs from professionals such as lawyers and architects; accordingly, the responsibility of each towards society should not be weighed equally. That FSC seeks to minimize societal risk through such regulation is understandable, but responsibility should not place on the shoulders of accountants. "CPAs are not government employees", he continues, "how can they play the role of exposers and whistle-blowers?" It was also pointed out that listing companies' replacement of their CPAs itself is ground-breaking news. Making it obligatory for CPAs to divulge the reason behind their refusing certification is a big setback for the business enterprise in question. They claim this FSC regulation is too theoretical and fails to take into consideration practical implementation difficulties.

Further, CPA Association board member Zhang Wei Zhen (Huang, 2003) pointed out that the model this amendment is patterned on was designed for administering listed companies, but over 80% of CPA's do not handle these FSC-related activities; yet now the framework is encased on *all* CPA's - this makes it hard for many small-to-mid scale CPA firms to swallow and accept. On these two counts I disagree. The accountancy profession is a very unique one in that the one who pays the CPA (business owner) and the one who reaps the benefit of the CPA's certification (investing public) are not the same person. The CPA's role involves public interest - although highly compensated by his commissioner to perform the audit, the CPA cannot shirk from societal responsibility towards the audit consumer. Taiwan accountancy profession must give this some thought - while most accounting firms do not handle business affairs of publicly listed companies, nevertheless, can we therefore complacently assume that financial reports of small-to-mid scale businesses have little to do with the general public? As far as the role of the CPA is concerned, I couldn't concur more with National Taiwan Cheng-Chi University accounting professor Ma Siu Ru's analogy when she says: "The CPA's primary role is that of CPA - to tell investors which companies' financial reports are sound. Although CPA Association, in expounding the CPA's role to outsiders, likens it to an 'entrepreneurial *doctor'*, in actuality, only when a CPA serves as administrative consultant to a business enterprise is he a doctor; as CPA, his role is more appropriately that of an 'entrepreneurial *policeman'*." (Huang and Lin 2006)

DISCUSSION

The Taiwan SAS 14 has remained unchanged until 2006. The standard statement only contained 17 paragraphs, and most of it is normative principles, lack of the details of procedures for fraud audit. However, auditing standards with regard to CPA's responsibility for fraud and errors changed. The public at large gave clear indications that they regarded the previous auditing standard as sub-standard. The accountancy profession responded by increasing the audit requirements in an attempt to bridge the expectation gap. On September 2006, Taiwan ASC issued the new SAS 43 under the recommendation by FSC in response of a series of corporate fraud from the year 2000. CPAs have a responsibility to detect fraud only if the fraud may cause the financial statements to be materially misstated. The responsibility to detect material fraud is not explicitly included in the Taiwan auditing guidelines. However, the Taiwan regulatory bodies and government severely criticized the audit function due to numerous company failures and material fraud cases that remained undetected. However, it is expected of the CPA to issue a CPA's opinion about the true and fair ("fairly presented" in Chinese terms) presentation of the financial statements and results of company operations. It can be referred whether or not CPAs have the responsibility to detect material misstatements of the financial statements due to fraud or errors is questionable.

In the past, Taiwan accountancy profession has allowed a rather significant audit expectation gap to exist (Ma, 2006a), but following the outbreak of the Enron incidents and the passage of SOX, the profession realized that the price such an expectation gap exacts ultimately had to be shouldered by accountants themselves, so recent auditing standards were designed to narrow such gap. The expanded SAS 43 of

2006, replacing the outdated SAS 14, was one step in this direction. Its main objective is summed up in its title: "The CPA's Responsibility to Consider Fraud in an Audit of Financial Statements." SAS 43 attempts to narrow the investing public's expectation gap as far as the CPA's fraud detection responsibilities are concerned, by communicating to them the following (Ma, 2006b):

> *"In their audit of financial statements, CPAs have a responsibility towards detecting fraud, but, in the event that they are unable to detect it, CPAs are not necessarily held responsible in the end. Whether or not they must take ultimate responsibility depends on whether they dutifully conformed to Generally Accepted Auditing Standards (GAAS) and were able to present evidence of this conformity, i.e. the audit work paper records. Naturally, circumstances surrounding auditee's commission of fraud are also prime considerations. These include: tactics used, position held, accomplices' degrees of involvement and with regard to faking account figures - the frequency, scope, dollar amount, etc".*

From its wording, one can readily see that SAS 43 lets accountants assume the responsibility of audit failure; however, business enterprise collapse caused by company management's malfunctioning internal control system is *not* part of that responsibility. By pointing out this distinction between audit failure and corporate failure, SAS 43's intent is clear- to rectify the public's conception, rather, misconception, of the audit function. Thus, instead of aligning audit objectives to public expectations, SAS 43 is designed in a way to manage the expectation gap on Taiwan accounting profession's own terms, as it is widely accepted that one way to narrow this gap is through education and exposure, so that financial statement users and the public do not have an overblown view of the audit function.

As mentioned above, the role played by the accountant during the audit process is that of a watchdog, not a doctor. When a CPA completes his audit report, he is in effect making a *second* declaration (the report itself) to establish the accuracy of the *first* declaration (the one made by company management, namely the financial statements). This he declares to the investing public- he himself is not offering new information, but merely raising the credibility of old information supplied to him. But with more and more complex operating environment and transaction modes, CPAs today really need a deeper understanding and insight into corporate management's motives, circumstances, and tactics when it comes to fraudulent financial statements. An external CPA who understands the special business and operating nature of the client he serves can better design the proper audit procedure and gather the appropriate audit evidence. This has always been a major challenge for Taiwan CPAs engaged in audit work.

The predicament Taiwan accountancy profession finds itself in today is not unique to Taiwan; it is a widespread worldwide phenomenon. Following the 2004 Procomp Informatics fraud incident, the Taiwan government and accountant supervisory agency, no different from other countries' response to Enron, scrambled to restore public confidence in the accounting profession. To four of Procomp's past and present engagement CPAs, the then newly formed FSC meted out its severest penalty: 2-year suspension (FSC 2005). At the same time, it began to call for a serious look into the CPA Act and corporate governance.

Meanwhile, the Taiwan accountancy profession continues to find ways to reduce the expectation gap. Admittedly, some of the suggested measures have already been tried out in other countries. One, for example, involves tightening the internal control system of publicly listed companies, the argument being that, since the role a CPA plays in certifying company financial statements is not one of internal audit, and in reality it is not possible for him to offer a 100% assurance of the auditee's overall financial reporting system. The key to financial statements' veracity and accuracy lies in the preparers of these company documents themselves. If strong corporate governance is in place, the company's board oversees management functions and holds management fraud intentions in check. When the occasion calls for it, board and company CEO can effectively intervene and present authentic company financial statements.

Another suggestion made is to strengthen both Taiwan accountancy profession self-regulation as well as non-self-regulation. To accomplish the latter, an external independent supervisory agency must be established to oversee Taiwan's accounting industry, its powers to include setting audit and accounting standards that align with public expectations. To accomplish the former, Taiwan CPA Association's various committees must not just be comprised of accounting professionals but include distinguished members from diverse sectors of society. Through their involvement, financial statement audit procedures can be made more transparent and public awareness heightened, so that CPAs in their financial audit and standards-setting capacities can, while functioning under a self-regulatory institution, better conform to the principles of what is termed "commonly accepted".

SAS 43, issued in September 2006, has at least been around for over a year. In contrast, Taiwan's CPA Act Amendment, though passed by the Executive Yuan in 2004, was not enacted into legislation by Taiwan's Congress until December 2007, so its effects will not be felt for some time. In particular, under the new amendment, FSC, a governmental agency, is now empowered to send its delegated inspectors to carry on investigations of accounting firms. Ostensibly to put the public's mind to rest that questionable firms and fraud perpetrators will be eventually brought to justice, one might reasonably put two and two together and question whether this might be an attempt on the part of the state to intervene, in the hope that the audit expectation gap may be held in check. Unfortunately, given its brief period of enforcement, it is too premature at this point in time to assess the amendment's repercussions in this respect. Taking into consideration the unique business and political conditions in Taiwan, and how rapid the political atmosphere in Taiwan can change, especially with the new president elected in March, 2008, only a repeat research study at a later time can actually confirm any of these speculations.

SUMMARY

In relation to the CPA's responsibility to detect fraud, the audit expectations gap is at its widest when CPAs are unable to discover the financial statements fraud or malpractice during their audit. Clamoring cries of "Where was the CPA?" infer that, by failing to discover significant fraud, he could not have done his job properly.

According to the accountancy profession, the auditor's report is the prime reporting vehicle used by CPAs to inform the users of financial statements about the results of the audit. In the report, the CPA included his opinion on the fairness of the presentation of financial statements. This is the public role of CPAs. The CPA has also a private role, the professional responsibility towards the audited companies or the specific groups of users of the audited financial statements. If the financial statements contained material misstatements which may be the result of fraud, the CPA should qualify his opinion on these financial statements. In fact, according to the accountancy profession, the CPA's report is normally issued after the completion of the audit work. If fraud or an illegal act has occurred, the CPA's report may be released too late to establish an early warning. Therefore, a legal early warning system where CPAs have to communicate directly to the government may facilitate the prosecution of potential fraud or illegal activities.

Legislation and professionally promulgated auditing guidelines with regard to the responsibilities of CPAs for fraud in Taiwan were discussed in the paper. It is argued that CPAs have no explicit responsibility to prevent fraud, but it is CPAs' responsibility to detect material misstatements of financial statements due to fraud. The focus is merely on how CPAs issue an opinion about the true and fair presentation of the financial statements and the results of the company's operations.

Unlike the early 20th century, which placed CPA responsibilities primarily on detecting financial statement errors and fraud within the corporation (Porter, 1997), toward the end of the 20th century, such responsibilities have shifted to attesting the "true and fair" presentation of the financial statements. Humphrey *et al* (1993) suggested that the changes in CPA responsibilities are "reflective of the conflicting, political nature of a self-regulated accounting profession". The phenomenon of downplaying CPAs' responsibilities by the accounting profession resulted from its pursuit of professional interests and its attempts to manage the interplay between its own interests and any competing public responsibilities and obligations (Humphrey *et al* 1993, Power 1995). This downplayed responsibility made it seemingly impossible to eliminate expectations gap. If this gap continues to broaden to the point when public trust buckles, that would signify the start of the breakdown of capital market and credibility of accountancy profession.

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EVIDENCE ON THE ADOPTION OF E-TOURISM TECHNOLOGIES IN NAIROBI

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ABSTRACT

The advent of the internet in the early 1990s revolutionized commerce by facilitating efficient communication and operations in numerous industries. The concept of e-tourism is revolutionizing the tourism industry operations across the globe, including Kenya, albeit a slow adoption owing to various challenges. The aim of this paper is to analyze the merits and demerits of embracing the internet in Kenya's tourism industry by exposing some of the strengths, weaknesses, opportunities and threats presented by the adoption of e-tourism. Data was collected from executives in the travel and tourism industry in Kenya's capital city, Nairobi, including both domestic and international tourists. Although there were several merits including flexibility and interactivity, adoption of e-tourism is confronted by various challenges including connectivity issues and redundancy of intermediaries. These changes have the potential to edge out many tourism businesses, which could increase unemployment in Kenya. It is therefore imperative for the government to support the country's tourism industry particularly the small and medium enterprises in implementing e-tourism technologies.

JEL: L83; L86

KEYWORDS: Tourism organizations; E-Tourism; SWOT Analysis; Enterprises; Internet

INTRODUCTION

Tourism has evolved and grown over time and has changed in terms of travel motivators, destinations and number of participants. Today, it is a major economic activity worldwide and a major contributor to the global economy. For instance, tourism in Kenya accounts for 10 percent of the Gross Domestic Product (GDP), making it the third largest contributor to Kenya's GDP after agriculture and manufacturing, and Kenya's third largest foreign exchange earner after tea and horticulture (KNBS, 2007). Tourism has also been identified as one of the key drivers in achieving the goals of the Vision 2030 (GOK, 2009).

The internet has become a significant sales and marketing distribution channel in hospitality and tourism (Lee and Morrison, 2010). The introduction of the computer brought with it technological innovations that have caused major shifts in the way operations are managed. Businesses have gained efficiency and effectiveness as a result of technological advancements. These advancements seem to have a never-ending life cycle, as various technologies continuously improve and develop upon their previous forms and functions.

Communications have become easier, faster and convenient globally since early 1990s. Indeed, the true potential of the internet in the tourism industry has recently been uncovered. Computers and computerized devices have slowly revolutionized the tourism industry and contributed to its growth and development.

E-tourism refers to any tourism activities carried out via the internet. The various functions of the internet have been diversified and as a result, the internet provides an un-matched potential for growth and development of the industry through increased efficiency and effectiveness in areas such as marketing, promotion, market research, finance, travel, purchasing and feedback systems. With the continued laying of fibre optic cables around the country following the arrival of the undersea cable in Mombasa, internet connectivity will be boosted in Kenya.

E-tourism has great potential to influence the growth and development of the tourism industry. However, unlike North America, Europe and other countries like South Korea (Computer Industry Almanac, 2009), E-tourism is a fairly new concept in Africa. Adoption rate in Kenya has been slow. Thus, the study aimed at establishing reasons for this state. In effect, the paper identifies the strengths, weaknesses, opportunities and threats presented by e-tourism adoption in Kenya.

The rest of this paper begins with a review of related literature, and then explains the methodology for the study. An analysis and discussion of the results and concluding comments would then follow.

LITERATURE REVIEW

Chen et al, (2000) notes two major categories of E-commerce as the business-to-business model (B2B) and the business-to-consumer model (B2C). B2C e-commerce includes Internet marketing, advertising, purchasing and electronic payment systems. Online travel service is a typical case for B2C e-commerce.

Tourism and Internet

Sheldon (1997) suggests that 'information is the life-blood of the travel industry', and therefore effective use of ITs is pivotal for its competitiveness and prosperity. ITs and particularly the internet empower the emerging globalization of tourism demand and supply experienced worldwide. At the same time, they propel it by providing effective tools to consumers for identifying and purchasing suitable products and to suppliers for developing, managing and distributing their offerings on a global scale. ITs therefore become an imperative partner as they increasingly determine the interface between consumers and suppliers (O'connor, 1999). In the late 1990s, the proliferation of the internet revolutionized communications as it enabled organizations to demonstrate their offerings globally using multimedia interfaces (Buhalis and Licata, 2002). Consumers are empowered through the new tools to search for information and to undertake online reservations. The availability of information on everything conceivable enables consumers to package their own bundles of tourism products and to purchase only the most suitable products for their own individual needs. Suppliers on the other hand have an unprecedented opportunity to communicate with their target markets globally, to develop their global presence and to establish direct relationships with consumers. It is estimated that 150 million people globally currently use the internet (Taylor, 1999). Most internet users are well-educated professionals who travel frequently and therefore should have a higher disposable income, as well as a higher propensity to spend on tourism products (Buhalis and Licata, 2002). These markets are targeted by most destinations and tourism organizations and hence the industry has to reflect on the needs and abilities in order to take advantage of the emerging tools. The rapid growth rate and the expeditious increase of on-line revenue experienced in most industries such as tourism, illustrates that electronic commerce will be dominant.

Tourism and Electronic Commerce

In the past few years there has been an explosion of online commercial activity enabled by the internet and this is generally referred to as electronic commerce. The shift towards electronic commerce is revolutionary because it offers several powerful marketing opportunities. Researchers have found that marketing in electronic commerce is more flexible than the traditional media; marketers can immediately add new items and update information based on the direct feedback received from customers (Kiani, 1998). Updating information in electronic commerce costs much less than creating new traditional brochures or catalogues. Accessibility is another powerful characteristic of the internet. Through the internet anyone on earth can access the information 24 hours a day. Companies can increase their business hours and consumers can reach needed information or even purchase a product at any time. Each time users connect to World Wide Web (WWW) site, the site provider has a record of the user's electronic address (Alrawi, 2007). Thus, companies can build a list of customers who participated in online commercial activity. Although the database marketing is not new, low-cost and high-speed electronic management of communication is revolutionizing marketing (Blattberg and Deighton, 1991). Compared to traditional media, marketing in electronic commerce is faster, less expensive, highly immediate communication (Ellsworth and Ellsworth, 1997). Communication shits from 'one-way' to 'two-way'; information flows between marketers and consumers (Blattberg *et al*., 1994), and from 'one-to-many' to 'many-to-many' where consumers and marketers can individually interact within the medium (Hoffman and Novak, 1996). Many-to-many communication brings many changes in marketing environment. Importantly it changes the orientation of information from 'supply side' to 'demand side'. Electronic commerce users want control over information search where they initiate their own contacts, control information flow and experience online. It also encourages them to desire messages from other online customers for their own individual needs. Thus, communication is becoming more and more consumer-oriented (Rayport and Sviokla, 1995).

Internet as a Source of Information

The internet is revolutionizing tourism marketing whereby it has evolved into a dynamic source of information as well as an effective marketing tool that is able to reach tourists efficiently (Hoffman and Novak, 1996). Due to the increased use of personal computers and the decrease in prices of internet services, the internet has become a source for gathering timely information and converting information into profitable results at a faster rate for tourists. Online purchases have become the fastest growing activity on the internet, and even users who are not online buyers search the World Wide Web for information (Goldsmith and Flynn, 2004).

Socio-demographic changes such as active ageing population and childless couples have also led to substantial changes in travel and tourism demand (Hall and Weiler, 1992). An important consequence of these social changes is a greater variety in pleasure travel. Increasingly, new, experienced, sophisticated and demanding travelers are actively seeking information about more exotic destinations and authentic experiences in order to satisfy their specific needs and wishes. Tourists are increasingly seeking information which enables them to 'experience' the destination instead of simply obtaining facts about 'how the destination is'. These trends for tourism suggest that travel has become a means for finding personal fulfillment, identity enhancement and self-expression. And, perhaps even more important, travelers have become especially concerned not with just being 'there' but with participating, learning and 'experiencing the there' they visit (Stebbins, 1982).

Factors Affecting Internet Penetration

There are various factors that affect penetration of E-tourism in organizations. These factors include cost of purchasing hardware, software and communication package, training cost of users, design and construction of internet presence, cost of hosting the site on a reliable server, ongoing maintenance and regular updating, marketing the internet service and registration of domain, development of procedures for dealing with internet presence, commissions for online purchases by intermediaries, advertising fees for representation in search engines and other sites and interconnectivity with travel intermediaries (Buhalis, 1999). The author also notes that most costs are management and marketing- based rather than IT based. Hence, it is evident that competent and innovative entrepreneurs will find the internet more beneficial than their counterparts who lack management or marketing skills, ability and knowledge. Costs can therefore be reduced by intensive management, marketing and IT training for enterprises which will enable them to develop a comprehensive marketing strategy and use IT as a strategic tool for their long-term development.

SWOT Analysis Approach

A SWOT analysis approach was used in this study. It is a procedure generally carried out before the development of a business plan which involves a detailed examination of the strengths and weaknesses of the business organisation, and the opportunities and threats in the environment within which it operates. The 'business' to be examined in this analysis is the adoption of e-tourism by enterprises in Nairobi to improve their operations.

From the literature review, strengths of e-tourism such as convenience and flexibility, and opportunities in the form of efficient marketing and establishment of customer contact were identified. The study aimed to expose the positive aspects of the use of the internet for tourism activities so as to better understand the possible opportunities that it presents to the tourism industry in Kenya. The identification of weaknesses such as connectivity problems and internet speed creates an understanding of the areas that require improvement and gives room for suggestions towards this improvement. The internet also brings with it the threat of redundancy of intermediaries, which creates the need for industry players to be more open to change and develop ways of mitigating the threats so that intermediaries remain relevant in the industry. By understanding the strengths, weaknesses, opportunities and threats of the use of the internet in tourism, industry players would be better equipped to enhance the positive and control the negative characteristics of e-tourism so as to ensure that the adoption of e-tourism will indeed lead to positive improvements and development of the tourism industry in Kenya. Many scholars have applied SWOT analysis including Kelly (2006) and TOUREG (2009). Kelly (2006) looks at the strengths, weaknesses, opportunities and threats influencing the potential of tourism to contribute to a more harmonious and therefore more peaceful world, while TOUREG (2009) performed a SWOT analysis for the European tourism industry.

DATA AND METHODOLOGY

Primary data was obtained directly from the field through administration of questionnaires and interviews. The target population included travel and tourism executives as well as international and domestic tourists. The sampling techniques used included both probability and non-probability sampling. Tourists were randomly selected, while hotel operators were selected using both purposive and convenient sampling techniques. The sample size included a sub-set of hotel operators (30 respondents) and 40 domestic and international tourists. On the other hand, secondary data was obtained from various published and un-published works such as text books, newspaper articles, internet articles and precious research reports.

Qualitative data was analyzed by induction method using content analysis which exposed common themes in the data, and presented in form of texts, verbatim and paraphrase. Descriptive analysis in the form of percentages, graphs and charts was also used.

ANOVA was used to test differences between mean rankings of three sub-groups; age, gender and country of origin. Chi square was also used to test how well sets of observations fit theoretical set of observation, including whether frequencies observed for rating internet in Kenya (poor, average or good) fit the expected frequency. These analyses were performed using SPSS.

RESULTS

This section analyzes and discusses the findings from the study. It explains how various factors influence adoption of e-tourism in Kenya's tourism industry.

Characteristics of Respondents

The study revealed that 8.3 percent of males were educated to secondary level, while 91.6% were educated to tertiary level. 100% of the female respondents were educated to tertiary levels. Out of the 40 respondents interviewed, 35% were between 18 and 25 years, and the same percentage between 26 and 35 years, while 20% were aged between 36 and 45 years. Only 10% of the respondents were above 45 years old. As for the country of origin, majority of the tourist respondents were international tourists from a combination of Europe, USA and Asia (75%) as shown on Table 1.

Table 1: Country of Origin of Respondents

Country of origin	frequency	Percentage
Kenya	7	17.5
Rest of Africa	3	7.5
Europe, America and Asia	30	75
Total	40	100

This table shows the observed frequency of forty respondents. The first row represents the country/region of origin, while the second and third rows show the count and percentage, respectively.

Reasons for Using the Internet

Tourist respondents were asked to rank certain aspects of internet use on a likert scale of 1 to 5, where 1 represents strongly disagree, 2- disagree, 3- undecided 4- agree and finally 5- strongly agree. The reasons were assigned weights, and the weighted averages calculated as illustrated in table 2. As shown in the table, the three highly ranked rationales for internet use include informative, convenience and currency. Lowest ranked was trustworthy. Perhaps the respondents did not place much importance to this constructs because of many uncertainties and suspicion about internet. Many people would be hesitant to trust the contents and security of some transactions through the internet – save for specific functions like bookings. Respondents gave equal ranking for efficient, trustworthy and easy to use.

Table 2: Reasons for Using the Internet

Extent of agreement	Strongly agree (5)	Agree (4)	undecided (3)	disagree (2)	Strongly disagree (1)	Σ(w×f)	R=Σ(w×f)/ N	Rank
Affordable	16	22	2	0	0	174	4.35	4
Convenient	18	21	1	0	0	177	4.425	2
Efficient	13	20	7	0	0	166	4.15	5
Fast	14	16	1	8	1	154	3.85	8
Trustworthy	2	14	22	2	0	136	3.4	9
Effective	9	27	4	0	0	165	4.125	7
Up-to- date	16	24	0	0	0	176	4.4	3
Easy to use	12	22	6	0	0	166	4.15	5
Informative	18	22	0	0	0	178	4.45	1

Table 2 computes the ranks of each aspects of internet utilizing the different weights. First, the total rank: Σ(w×f) is computed by multiplying the weights with its respective frequency, then computing the total. The mean rank R can be computed by dividing each sum by the respective N, in this case, 40, which gives us the order from highest to lowest.

Rating of the Internet in Kenya

The respondents were also asked to rate the internet in Kenya on a 3-point scale ranging from poor to good. A substantial 52.5% of respondents rated internet in Kenya as average, while 40% said it was good.

The remaining 7.5% indicated that it was poor ($\chi^2 = 12.95$, df = 2, p = 0.002). The average rating could be attributed to the 75% of respondents coming from outside Africa. Obviously, the infrastructure in other continents is more advanced than what currently exists in Kenya.

Ranking by Age, Gender and Country of Origin

One way ANOVA demonstrated that ranking of various aspects of the internet related significantly to age and country/region of origin as shown on table 3. For instance, the youthful respondents of 18-25 years and 26-35years both had higher means of 4.36, as opposed to the other groups such as 45years and above (M=3.25) when rating internet as 'easy to use'.

There was a variation in ranking within three domains between country of origin. Rankings by European and American respondents for affordability of internet was higher (M=4.47) than those from Kenya (M=3.86). Perhaps these rankings differ because the cost of internet in Kenya is still higher than those in developed countries, and therefore respondents from Europe and USA were basing on the cost at home. The same reasons could explain higher rankings for speed among the Europeans and American respondents (M=4.47). As for effectiveness of internet, respondents from the rest of Africa appear to attach more importance than other respondents (M=4.27).

Table 3: Relationship between Rankings and Age, Gender and Country of Origin (F Values)

	Age	**Gender**	**Country of Origin**
Affordable	1.502	0.602	3.551*
Convenient	0.174	0.013	1.261
Efficient	0.596	0.411	1.735
Fast	0.556	0.492	94.881*
Trustworthy	1.997	0.446	0.664
Effective	0.393	0.323	6.436*
Up-to- date	1.581	0.066	1.476
Easy to use	5.024*	1.382	2.183
Informative	0.943	0.258	0.654

* $p \leq .05$ *Table 3 above shows the F values of the three sets of relationships: i.e. rankings and age, gender and country of origin. The statistics that are significant at 95% level of confidence are also marked with asterisks.*

Internet Presence and Use by Tourism Organizations

Out of the 30 tourism enterprises interviewed, only nine (30%), notably bigger companies had established information management system or websites while 70% did not. Nevertheless, all the companies that neither had information system nor websites used the internet in their operations and correspondence in form of electronic mails.

The study also sought to find out the extent of transactions with customers through the internet. All respondents were found to transact with their clients via the internet in one way or the other. Of the total client-supplier transactions of each company, over 70% involved the use of the internet. Those with websites mentioned that their consumers were able to carry out activities such as booking and reservations, comparison of offers, searching for travel destinations and obtaining information. The majority of online clients were notably from Europe and North America (50%) while the other half constituted a mix of clients from Africa and other regions such as Asia.

Problems and Benefits Associated with Internet Use for Organizations and Customers

The tourism organizations and tourists (customers) were asked to give problems as well as benefits/advantages they associate with using the internet. The organizations cited problems such as expenses of acquiring machines and software, cost of hiring skilled personnel, constant updating of information and competition from larger, more established companies; and benefits including wider reach of market, increased profit due to reduced distribution cost, effective marketing tools among other benefits including direct contact with clients. On the other hand, customers cited advantages such as savings due to absence of intermediaries and problems such as untrustworthy information.

CONCLUDING COMMENTS

This study aimed at finding out the factors influencing adoption of information technologies in Kenya's tourism industry. It sought to identify the strengths, weaknesses, opportunities and threats presented by adoption of e-tourism in Kenya. A field survey on travel and tourism executives and both international and domestic tourists in Nairobi aided in achieving these objectives.

Strengths are those positive qualities that are inherent in the features and functions of the internet, and that positively influence tourism activities. These strengths include convenience, speedy transactions, efficiency and effectiveness, informative and up to date. The top three aspects of the internet (informative, convenience and up-to-date) ranked by tourist respondents were part of these qualities, which confirms that the internet is obviously an important convenient source of up-to-date information. But within this positive qualities are weaknesses such as enormous confusing information in the web. Threats to the industry players such as fraud and redundancy also exist. In spite of these threats and weaknesses, IT brings many opportunities including new marketing practices, mitigation of perishability and ultimate enhanced profit margins.

Kenya is primarily dependent on Europe and USA for international tourists as found from the current study. Countries from these regions have advanced information technologies, and are more likely to use this new infrastructure in most of their day to day activities including search for information about possible destination as well as executing certain transactions such as making bookings. Many hotels and travel agencies in Kenya are still lagging behind in technological adoption. It is therefore apt that the majority of tourists from these generating countries are better informed than the travel agents considered as professional advisers. Speedy adoption of e-tourism by the tourism industry in Kenya is therefore basic in order to remain competitive. South Africa that is generally endowed with attractions similar to Kenya's is a major recipient (60%) of international tourists in Africa (UNWTO, 2009) probably because she has been keen to move with the rest of the world in terms of IT.

It is ironic that higher ratings by tourists from European, USA and Asia for speed and affordability were recorded when there is actually low connectivity speeds with higher costs of internet in Kenya. This could mean that tourists do not spend most of their time online in Kenya – save for communicating with friends and relatives back at home. It also means that most of the trip arrangements are usually complete before they start traveling to Kenya. Thus, the tourism industry in Kenya should strive to use IT to be felt at all stages of the traveler's purchase behaviour particularly at the pre-travel stage, which comprises of the information search, evaluation among alternatives and actual payment and travel.

Market research and adopting new marketing tools are obvious opportunities that e-tourism opens. It is worrisome though that only nine out the 30 companies surveyed had actually embraced some form of e-tourism technologies. The other 70% mainly drawn from the small and medium businesses had not adopted e-tourism due to various reasons including the costs involved. Nonetheless, tourism companies in Kenya must eventually change the way in which they conduct their businesses. The overwhelming shift to computerized operations will exert pressure to these companies. Those who will invest in the new technology are expected to maintain their competitiveness and therefore survive. Competition is a constantly changing landscape in which new products, new ways of marketing, new production processes and new markets emerge. Today's dynamic competitive environment is characterized by change and innovation.

Ultimately the internet and the emerging technologies provide unprecedented tools for communication and interaction, bridging the gap between tourism suppliers and consumers on a global basis. As with any industrial revolution there will be several winners as new opportunities emerge and several losers due to the strength and perhaps weaknesses. Therefore non-competitive players will suffer the consequences of this evolution in the tourism industry. However, the likely losers in this equation are the traditional travel agents and tour operators whose survival is threatened by the widespread use of the internet which could edge them out.

The Kenyan government should not turn a blind eye on this emerging trend. If small and medium businesses in Kenya cannot compete globally, it would translate to losses not only in employment opportunities but also may result in a decline in tourist arrivals. Thus, the Kenyan government should give more support to the tourism industry. This includes facilitating IT training to the players and lowering the high taxes charged on computers and accessories. This way, the small and medium companies will be able to adopt e-tourism.

It is critical to note that the internet is here to stay and it is up to the traditional intermediaries in Kenya to evolve with the times, just as the suppliers at the generating countries are doing. They may form partnerships with these suppliers, or establish their own websites. This will give them access to the global marketplace and enable them to reposition themselves in the distribution channel so that they are not completely phased out of the channel. As earlier mentioned, tourism businesses in Nairobi and Kenya in general should embrace e-tourism since it presents affordable tools and efficient mechanisms to serve their customers without having to rely on intermediaries. This will enable them to realign the power structure in the distribution channel and if they are competitive enough, to develop and distribute innovative offerings. This will empower and enable them to strengthen their competitiveness and succeed in the global marketplace.

Limitations and Areas of Further Research

This study surveyed a total of forty international and domestic tourists, and thirty hotel operators in Nairobi. The sample size for tourists is quite small; therefore this investigation is exploratory in nature. However, future research should employ a bigger sample size, be spread to other major towns in Kenya and should further study challenges confronting the small and medium tourism companies in adopting IT.

APPENDICES

Appendix 1: Questionnaire for Tourists

SECTION A: PERSONAL INFORMATION

1. Gender : male ☐ female ☐

2. Please indicate your age as appropriate
   18- 25 yrs ☐ 26- 35 yrs ☐ 36- 45 yrs ☐ 45yrs and above ☐

3. Country of origin ____________________

4. Occupation :
   Self-employed ☐
   Civil servant ☐
   Private co. / NGO ☐
   Student ☐
   Unemployed ☐
5. Education level: Primary ☐ Secondary ☐ College/ university ☐

SECTION B: INTERNET USE

6. Do you have access to internet? ____________________
7. If yes, do you use the internet for any tourism- related activity?
   Yes ☐ No ☐
8. Which of the following activities do you use the internet for?
   a. Booking and reservations ☐
   b. Searching for attractions ☐
   c. Travel networks ☐
   d. Price comparisons ☐
   e. Others (specify)..

To what extent do you agree with the following statements regarding the internet?
Please indicate with a number the most appropriate response to the question

1= strongly disagree 2= disagree 3=undecided 4=agree 5= strongly disagree

Reasons for using the internet	Insert the appropriate no. against the statements
1. It is affordable	
2. It is convenient	
3. It is efficient	
4. It is fast	
5. It is trustworthy	
6. It is effective	
7. It is up to date	
8. It is easy to use	
9. It is informative	

9. From your use of the internet in Kenya, how would you rate it (the internet)?
   Poor ☐ average ☐ good ☐
10. Which problems do you encounter while using the internet? ....

Where do you get most of your tourism information?
Television adverts ☐ Print media ☐ The internet ☐ Friends and family ☐

Appendix 2: Interview Schedule for Travel and Tour Operators

Administered for the purpose of establishing the extent to which e-tourism is in use in travel and tour operations as well as determining the positive and negative factors associated with its use.

1. Does your organization have a website?
   Yes ☐ No ☐
2. What activities are customers able to carry out in the website? (e.g. booking and reservation, purchasing, etc.)
   ____
   ____

3. Approximately what percentage of your clients do you transact with via the internet?
____
____

4. From which area in the world do these clients come from? (Europe, Asia, America, Africa. etc)
____
____

5. Which problems, if any, do you as an organization encounter in the use of the internet?
____
____

6. As per your experience, what are the advantages or benefits of using the internet for tourism related activities?
____
____

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ACKNOWLEDGEMENT

The authors wish to thank the anonymous reviewers for their excellent comments, resulting in a significant improvement in the quality of this paper.

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TOTAL QUALITY MANAGEMENT ADOPTION IN A PUBLIC HOSPITAL: EVIDENCE FROM MAURITIUS

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ABSTRACT

Total Quality Management (TQM) has emerged as a potential solution to improve the efficiency and effectiveness of health care provision and is becoming increasingly important for the successful operation of public hospitals. The aim of the study is to determine the extent to which TQM can be adopted in public hospitals in Mauritius. The objective of the study is to assess management and employees perceptions on the critical factors influencing effective TQM adoption in public hospitals. A questionnaire comprising of items on a 5-point Likert scale was used to capture the perceptions and the data was analyzed using descriptive statistics and t-tests. The findings showed that the TQM dimensions have a significant impact on the perception of management and employees. Analysis of variance (ANOVA) was further employed to examine if the critical factors were perceived differently by management and employees. The results also revealed that management perceives TQM adoption as being relevant and effective, in the case of public hospitals.

JEL: M31

KEYWORDS: TQM adoption, Management, Employees, Public hospitals, ANOVA

INTRODUCTION

One of the fastest growing industries in the service sector is the health-care industry (Andaleeb, 1998). The health care industry has restructured its service delivery system in order to survive in an unforgiving environment resulting from maturation of the industry, reduced funding, and increased competition (Williams, 1994; Cho *et al.*, 2004). Total Quality Management (TQM) is a philosophy with the aim of achieving an overall performance. TQM has become a globally strategic force, which may lead to several benefits: improved customer satisfaction, greater employee focus and motivation, reduced waste and improved overall performance (Juran, 1988). TQM has thus emerged as a potential solution to improve the efficiency and effectiveness of health care provision and is becoming increasingly important for the successful operation of public hospitals. Many hospitals are turning towards TQM adoption for cutting costs and overall improvement in the quality of the services provided. It is argued that the measurement of quality is not yet well established in the health care industry although there are some measurement mechanisms in place (Huq, 1996; Yang, 2003; Huq, 2005).

There is also the growing consensus that customer satisfaction is an important indicator of health care quality and many hospitals are searching for ways to change the delivery of patient care through TQM (Schalk and Dijk, 2005). Although TQM has been extensively researched for many years now in the manufacturing sector, there is still significant interest in and need for empirical studies on TQM given the fact that many service organizations are adopting and implementing TQM and its diffusion is on the increase globally (Ehigie and McAndrew, 2005). Therefore, it is imperative that a proper study is carried out to ensure that the adoption of TQM is a worthwhile initiative in public hospitals. Public hospitals have always been criticized for their poor service quality and to implement a quality improvement program management in public hospitals may not be aware of the benefits of adopting and implementing a quality improvement program. Thus this study aims to investigate the extent to which public hospitals in

Mauritius are willing to adopt TQM as their main driver towards quality improvement. The study assesses the perceptions of management and employees on the adoption of TQM in a public hospital.

The present study examines TQM adoption in a public hospital from the management and employees perspectives. The paper is organized as follows: first, the paper reviews the literature on TQM and its application in the health care as well the key factors of TQM. The methodology is then presented, followed by major findings and discussions. The last part of the study concludes the paper and presents the limitations of the study.

LITERATURE REVIEW

TQM has become one of the competitive strategies of choice during the 1990s and has been widely implemented throughout the world (Rad, 2006). However, TQM in the service industry is still in the early stages of theory development (Vouzas and Psychogios, 2007). TQM has been defined and represented in a variety of ways, for example, a search for excellence, creating a "right first time" attitude, zero defects and delighting the customer (Moore and Brown, 2006). TQM is an organization-wide process, where employees are motivated and empowered to do the right things, right first time and every time, to reflect on what they do and to improve what they do (Mohanty and Behera, 1996). As opposed to manufacturing organizations, where TQM is applied widely, service in organizations is more difficult to measure due to the intangibility, inseparability, variability and perishability of the service characteristics. A mere claim of TQM adoption is not sufficient, rather, clear understanding and training of personnel in the TQM philosophy is necessary to prevent it becoming a management fad (Ehigie and McAndrew, 2005).

Quality improvement in health care organizations is considered as a means to better meet the needs and expectations of patients. According to Yang (2003) adopting TQM in the health care industry is not as smooth or successful as in the manufacturing or service industries. As put forward by Huq (1996) today hospitals are being challenged to look at their operations and find more efficient ways to do business. Many hospitals are turning towards TQM for cutting costs and overall improvement in the quality of the services provided. The concept became popular in the health care industry during the late 1980s (Garvin, 1988; Westphal, Gulati and Shortell, 1997). Patient satisfaction is becoming increasingly important for the successful operation of private and public hospitals (Andaleeb, 1998; Yang, 2003; Cho *et al*., 2004). Yang (2003) further argues that the use of TQM has provided a partial cure to service quality problems in healthcare organizations. In US healthcare, TQM is associated with the Baldrige model and has been viewed recently by some as too ambitious for healthcare, while in Japan, healthcare services have not introduced TQM, but some hospitals have set up quality control circles which have been running successfully for some time (Øvretveit, 2001).

Past studies found that there was a growing consensus that patient satisfaction is an important indicator of health care quality. Huq **(**1996, 2005**)** argued that determining the factors associated with patient satisfaction is a significant issue for health care providers. TQM further aims to provide organizations with a model for success through customer satisfaction (Vouzas, and Psychogios, 2007). However, that there are some barriers encountered during the implementation of TQM in public and non-profit organizations due to the bureaucratic culture and the passive behaviors. Consequently TQM initiatives must include an in-built culture of continuous improvement, which can help an organization satisfy the needs of its customers on an ongoing basis (Walsh, Hughes and Maddox, 2002). Even the health care industry is bonded with the cultural background and the traditional professional style of leadership among physicians and other top management. It is good to note that government health sector has less flexibility in its resource allocation and human resources management.

Critical Factors Influencing TQM

TQM adoption and implementation requires changes in structure, system, and process as a necessary precondition to achieve improved business performance and changes in employee behavior (Yang, 2003). It is therefore important to identify the critical factors that influence the success of TQM adoption and implementation in service organizations (Taylor and Wright, 2003). Researchers have derived critical success factors (Ahire *et al*., 1996; Baidoun, 2003) spreading from manufacturing (Ahire, 1996; Ahire *et al*., 1996; Agus and Abdullah, 2000), small and medium scale industries (Yusof and Aspinwall, 1999; Kumar *et al.*, 2009), higher education (Kanji and Tambi, 1999), health care (Kunst and Lemmink, 2000). These success critical factors include practices related to management commitment, education and training, employee involvement, teamwork, customer focus, benchmarking, quality information and analysis, process management, continuous improvement and organizational culture (Dahlgaard *et al*., 1998; Dale, 1999; Bergman and Klefsjö, 2003). Organizations need to adopt the critical success factors if they are to achieve business excellence. Some of these critical factors are briefly discussed.

Factor 1: Top management commitment: Management acts as the driver for TQM implementation, creating values, goals and systems to satisfy customer expectations and to improve an organization's performance (Juran, 1988; Dale and Plunkett, 1990; Ahire, Golhar and Waller, 1996; Huq, 2005; Rad, 2006) and responsible for providing direction and encouragement to the organization (Shores, 1992). Management commitment is crucial for a company's quality development since, with their support and contributions, adequate resources will be allocated to enhance the training activities resulting in better quality measurement, improved customer satisfaction and benchmarking. Berman *et al.* (1996) recommend that top management needs to identify quality improvement areas, for example, improving teamwork or improving hospital quality services in order to achieve sustained TQM implementations. In fact hospital directors are exposed to normative pressures to adopt innovative management practices such as TQM (Taylor and Wright, 2003; Huq, 2005).

Factor 2: Employee involvement: Employee involvement is a critical component of TQM. TQM requires total management commitment to ensure employees indulge in quality work culture and hence create healthy corporate image by rendering quality services to the customers (Huq, 2005; Schalk and Dijk, 2005). Increased employee's participation in the overall quality strategy brings an increased flow of information and knowledge and contributes to the wellness of the organization for resolving problems (Schalk and Dijk, 2005). For employees, a significant aim of TQM is the broadening of work responsibilities.

Factor 3: Customer satisfaction: TQM makes customer satisfaction the number one organization priority, where an emphasis is placed on meeting or exceeding external customer expectations in every transaction (Kangi, 1998). A close relationship with the customers is necessary to fully determine their requirements, thus customer involvement is necessary in the product design and development process (Das, Paul, and Swierczek, 2008; Kumar *et al*., 2009). TQM is one such philosophy which aims to provide organizations with a template for success through customer satisfaction (Arasli and Ahmadeva, 2004). Customer focus is the emphasis placed by hospitals in meeting the unlimited expectations of its customers (Das, Paul, and Swierczek, 2008).

Factor 4: Teamwork: Teamwork is a critical factor in TQM as teamwork is essential in having a fully functioning process management and improvement, especially in medical treatment; it requires cooperation among all related departments (Westphal, Gulati and Shortell, 1997; Huq, 2005; Vouzas, and Psychogios, 2007). According to Yang (2003), teamwork is important to overcome sectionalism and to strengthen cooperation for improving quality (Huq, 2005). The most difficult aspect of TQM is to create an environment of "all one team" (Rad, 2005). The author further adds that everyone throughout the organization must work together to improve processes and to execute them with energy and efficiency.

Factor 5: Processes: TQM is centered for an effective management of processes and continuous customer satisfaction (Kanji, 1998). The process is improved by reducing the source of variation that exists within it and everyone, in the TQM environment, is required to gain additional capabilities to improve the process (Eng Eng and Yusof, 2003; Huq, 2005). Organizations need to have a set of well-defined and well-designed processes for meeting the organization's quality and performance requirements. Schalk and Dijk (2005) are of the opinion that hospitals will have to focus on integrating their various processes in different levels that include quality management, human resource management etc. to meet and exceed customers' expectations and to achieve organizational excellence.

Factor 6: Continuous improvement: Continuous improvement is a powerful concept related to the pursuit of never-ending improvement in meeting external and internal customer needs (Huq, 1996; Taylor and Wright, 2003; Schalk and Dijk, 2005). Kanji points out that continuous improvement require management by facts and commitment of all employees with an emphasis on teamwork to promote a bottom-up thrust for quality improvement (Kanji, 1998). Continuous improvement is the philosophy of improvement initiatives that increases success and reduces failure and must be integrated into the management of all systems and processes (Huq, 1996; Walsh, Hughes and Maddox, 2002; Vouzas and Psychogios, 2007).

Factor 7: Training: Training is a very important tool for promoting and developing skills related to an organization's beliefs and values to change to a culture that places high value on quality. Once management has the skills to lead the TQM process, the rest of the organization should be trained to ensure a systematic, integrated, consistent organization-wide effort (Rad, 2005). The author further asserts that an emphasis on continuous learning and improvement, induces a positive culture where there is sufficient behavioral modification to warrant a sustainable TQM climate. Providing training to employees in problem solving skills is one of the most important activities for organizational climate change (Taylor and Wright, 2003).

Factor 8: Culture change: Instilling quality-oriented culture requires change of attitudes, value systems, and beliefs. TQM is an educational process aiming at changing the behavior and attitudes of organizational members and then developing quality sensitive organizational culture (Huq, 2005; Rad, 2006). Organizational culture has a significant effect on the successful TQM implementation (Rad, 2005). Culture is something collective in an organization and therefore not a characteristic of individuals within it. It is necessary for the management to cultivate concern for employee participation and continuous improvement, and encourage organizational changes.

TQM adoption is believed to lead service organizations to performance improvement. Taylor and Wright (2003) found that senior management commitment is the most essential antecedent of TQM success. Other studies reveal that customer focus, participation and teamwork and continuous improvement are the principles on which TQM is grounded (Yang, 2003; Huq, 2005; Rad, 2005). Huq (2005) found that organizational culture has a significant effect on the successful implementation of TQM. However, many healthcare administrators did not believe that TQM adoption leads to a better organizational performance, in financial terms, and as a strategic advantage (Øvretveit, 2001; Schalk and Dijk, 2005). Vouzas and Psychogios (2007) assessed managers' awareness of TQM and they found three items: continuous improvement and training, total employee empowerment and involvement and quality driven culture, representing the whole concept of TQM approach. Unlike several previous studies, this study did not attempt to assess the implementation of TQM or its actual impact on quality improvement (Westphal, Gulati and Shortell, 1997; Yang, 2003), it rather focuses on TQM adoption as the critical event of interest.

RESEARCH METHODOLOGY

This study was initiated to explore the adoption of TQM in a public hospital in Mauritius. The objective of the research was to measure management and employees' perceptions of quality management practices in public hospital. Based on the literature review, a questionnaire comprising of 28 attributes was developed, focusing on eight TQM principles: teamwork, customer satisfaction, continuous quality improvement, and an emphasis on empowering employees to identify opportunities to improve quality and top management commitment, training, organizational culture and service process. The questions were measured on a 5-point Likert scale, ranging from '1 = strongly disagree' to '5 = strongly agree'. A pre-test was performed before the final data collection to determine if the questionnaire was well understood. The survey was conducted in one of the five major public hospitals in Mauritius and 40 and 200 questionnaires were respectively distributed to managers and employees across the hospital departments. The managers were top management in-charge of the different departments in the hospital, while employees were the medical staff, other health care professionals and administrative staff. Out of the 200 questionnaires, 155 questionnaires were retained for analysis while all the 40 questionnaires from the managers were used for analysis. Data was collected over a period of two weeks. Data were analyzed by Statistical Package for the Social Sciences, SPSS program, means, standard deviations and t-test were computed and One-Way Analysis of Variance (ANOVA) was used in order to determine if there were any meaningful differences according to management and employees perceptions. These analyses have been made on the eight TQM critical factors.

RESULTS AND DISCUSSIONS

Table 1 revealed management and employees perceptions of TQM adoptions across 8 critical factors. The results of study indicated that all the 28 attributes were statistically significant at $p < 0.05$ and $p < 0.1$ (Table 1). Management has the highest perception for "Employee training is provided in quality principles" (mean = 4.35), followed by "Employees are actively involved in quality-related activities" (mean = 4.30), "Our organization conducts a customer satisfaction survey on a regular basis" (mean = 4.20), and "Employees are very committed to the success of our organization" (mean = 4.20). These results show that management highly wishes to bring quality to every department of the hospital. The results further revealed that management had low perceptions for "Management is in routine contact with customers and employees" and "Feedback received from patients is used continuously to improve the work that we do" both attributes scored a mean of 1.75.

From the employees' perspectives, the attributes that were highly rated are "Employees are actively involved in quality-related activities" (mean = 4.30), followed by "Our organization conducts a customer satisfaction survey on a regular basis" (mean = 4.16) and "We carry out performance assessment to measure excellence in service delivery" (mean = 4.15). Table 1 also revealed that employees had poorly rated "Management is in routine contact with customers and employees" and "Feedback received from patients is used continuously to improve the work that we do" both scoring a mean of 1.75. It is observed that both management and employees have the same perceptions regarding employees' involvement in quality-related activities, conducting customer satisfactions survey on a regular basis, management contact with employee and customers as well as feedbacks from customers being used for continual improvements.

The overall mean for the eight TQM critical factors are statistically significant and the perceptions of both management and employees vary across the eight factors. It seems that management is not fully satisfied with the extent of 'teamwork' (mean = 2.13) as compared to employees' perceptions (mean = 3.12). Previous studies concluded that teamwork is a key factor in the successful implementation of TQM (Huq, 2005; Rad, 2005). Moreover, the most important aspect of teamwork among employees and management in public hospitals seems to be the need for teams to work closely and to coordinate work with a view to quality improvement (Huq, 1996). The results of this study clearly indicate that much need to done by the hospital, in terms of teamwork. It is further observed that the overall perceptions among management and employees seem be quite low as regard to 'continuous improvement'. However, management views continuous improvement as a factor which already exists in the hospital. The perceptions among management reveal that the hospital should have procedures and processes established to ensure that incremental and ongoing improvements are made to products and services. The results on 'management commitment' dimension are mixed. The overall mean scores for management and employees to the 5 attributes associated with 'management commitment' are 3.75 and 3.39 respectively. Management and employees tend to agree to most of the attributes with the exception of "There are clear quality goals identified by management". It appears that both management and employees are not happy with the level of management commitment in the organization. Management commitment is an essential antecedent of TQM success (Huq, 1996; Zairi, 2000; Taylor and Wright, 2003; Rad, 2006). However, in the present study, this factor still needs to be improved. The results reflect the findings of Rad (2005) who concluded that, for health care organizations in which managers were committed to TQM, its success was greater than in other organizations with a lower management commitment.

Both management and employees agree (mean = 4.18 and 3.96 respectively) that without proper and continuous 'training', TQM cannot be adopted. Based on the above, it is found that the opinion of the respondents is justified. For a service provider 'customer focus' is the most important factor and the results show that 'Customer focus' has been poorly perceived by management and employees as both scored a mean of 2.71. It is observed that, health care managers do have a problem in determining indicators and tools for receiving patients' ideas and suggestions, assessing their satisfaction level about the health care services and trying to improve their satisfaction. Questions on this factor focused on whether the needs and opinions of customers are monitored by the hospital. Customer feedback process is an integral part of the TQM approach. The results concur with the work of Rad (2005) who found that giving no attention to patients and their needs and wants is another reason for TQM failure in health care organizations. The overall mean (3.00) indicates that there is a tendency for management to disagree with the statements pertaining to 'employee involvement' as compared to employees (mean = 3.50), as a factor of TQM adoption. Both management and employees share the view that TQM involves everyone in an organization.

This study revealed that the level of employee involvement is quite low and therefore does not reflect the view of Zairi (2000) who reported that the issue of employee commitment and involvement, as a critical quality factor for successful TQM adoption. Management and employees have poorly perceived the attributes under the dimension 'organizational culture' and the overall mean for this dimension as perceived by management is 2.40 and that of employee is 1.99. Thus, the culture and attitudes within organizations needs to be changed if TQM is to be adopted but it is argued that changing mindsets is the hardest of management jobs. In order to build a quality culture, employee motivation need to be adapted to the cultural setting (Berman *et al.*, 1996). This finding indicates there must be changes in attitudes, communications, employee involvement and commitment if the hospital intends to adopt TQM. The dimension 'processes' was poorly perceived by both management (mean = 3.60) and employees (mean = 3.30). Process management is seen as a major obstacle toward TQM adoption both by management and employees. According to the respondents, benchmarking is almost inexistent and moreover resources are not allocated based on processes. The development of procedure and documentation are vital for control and improvement for TQM adoption.

Hospitals have a unique situation in which variation is almost inherent to the environment. Although in some cases management is justified in putting the blame on the employees, in many cases variations in quality is caused by common causes that management is not ready to acknowledge. The results of this study show that there has not been as much visible involvement and support by management as is probably needed to effect the cultural change that is necessary to move forward at a steady pace. Therefore, determination of causes of quality variation is extremely important for TQM to be successful in a hospital. Significant efforts have not been made at this point in time to reduce these common causes of variation and the common causes observed from this study include inadequate collaboration among employees, failure to put the customer at the centre of the process, and lack of empowerment.

Nevertheless, it should be noted that public hospitals are less flexible in their resource allocations and their human resources management than private hospitals.

Table 1: Descriptive Results for the 8 TQM Critical Factors

Attributes	Management			Employee		
	Mean	S.D	*t*-value	Mean	S.D	*t*-value
Teamwork	**2.13**	**1.01**	**3.749***	**3.12**	**1.19**	**3.366***
Employees work closely together as a team in order to coordinate work and improve quality	2.10	0.79	4.319*	3.12	1.29	3.350*
Management is more in favor of team recognition rather than individual recognition	2.15	1.23	3.179*	3.12	1.09	3.382*
Continuous Improvement	**3.65**	**0.85**	**6.055****	**2.29**	**0.66**	**6.83****
We carry out performance assessment to measure excellence in service delivery	4.07	0.70	-0.425**	4.15	0.67	-0.436*
Change initiatives are driven by patients' needs and expectations	4.13	0.67	12.245*	1.90	0.85	10.768*
Management is in routine contact with customers and employees	3.43	0.96	7.599*	1.75	0.44	10.969*
Feedback received from patients is used continuously to improve the work	3.43	0.96	5.274*	1.75	0.44	6.041*
Management is actively involved in communicating the organization's vision for quality	3.52	0.80	5.490*	2.30	1.08	4.685*
Management routinely removes barriers to performance, innovation, and quality	3.30	0.99	6.144*	1.90	0.45	8.938*
Management Commitment	**3.75**	**0.73**	**1.131****	**3.39**	**1.09**	**1.133****
The hospital has an effective quality improvement plan	3.84	0.66	-1.850**	4.15	0.671	-1.842**
Management views quality as being more important than cost	4.16	0.69	3.047*	3.50	1.28	2.231**
Management promotes a quality culture within the organization	3.84	0.59	2.492**	3.35	1.18	1.773*
There are clear quality goals identified by management	2.85	1.02	2.092**	2.30	1.08	2.026**
Management is committed to quality improvement at all levels	4.07	0.70	1.964**	3.65	1.25	1.478**
Training	**4.18**	**0.53**	**-1.543****	**3.96**	**0.65**	**-1.359****
Employee training is provided in quality principles.	4.35	0.49	-1.842*	4.09	0.73	-1.490**
Resources are available for employee quality training	4.00	0.56	-1.244**	3.82	0.58	-1.228**
Customer Focus	**2.71**	**0.73**	**-0.048****	**2.71**	**0.81**	**-0.059****
A summary of customer complaints is given to the Ward Manager/Charge Nurses	1.95	0.83	1.070*	2.18	0.89	1.030*
The Ward Manager/ Charge Nurses are aware of the level of customer satisfaction	2.05	0.76	0.119*	2.07	0.96	0.105**
The hospital uses customer feedback to improve service quality	2.05	0.76	0.121*	2.07	0.91	0.110**
Quality-related customer complaints are treated with top priority	1.95	0.83	0.025*	1.96	0.82	0.025**
Customers' requirement is used as the basis for measuring quality.	4.05	0.61	-1.396*	3.84	0.59	-1.411**
The hospital conducts a customer satisfaction survey on a regular basis	4.20	0.62	-0.224**	4.16	0.67	-0.215**
Employee Involvement	**3.00**	**0.94**	**-2.228***	**3.50**	**0.56**	**-3.098****
We often work in teams, with members from a variety of departments	2.07	1.04	0.059**	2.00	0.80	0.068**
Employees are very committed to the success of our organization	2.85	1.08	-5.468*	4.20	0.41	-8.413*
Employees are actively involved in quality-related activities	4.09	0.69	-1.275*	4.30	0.47	-1.561**
Organizational Culture	**2.40**	**0.81**	**1.999****	**1.99**	**0.93**	**1.790****
There are few 'status' distinctions between managers and employees	1.95	0.83	0.094**	1.97	0.89	0.091**
Employees are empowered to take direct action whenever it is likely to affect quality	2.84	0.98	3.488*	2.00	0.80	3.903*
Processes	**3.60**	**0.56**	**-0.911****	**3.30**	**0.68**	**-0.738***
We have a program to find wasted time and costs in all internal processes	3.90	0.64	-0.064**	3.40	0.65	-0.064**
All our processes have been designed to meet quality standards.	3.30	0.47	-1.758**	3.20	0.72	-1.411**

*Table 1 shows management and employees perceptions across eight TQM critical factors. * and ** indicate significance at 1 and 5 percent levels respectively.*

ANOVA ON TQM CRITICAL FACTORS

In order to determine whether any significant differences exist between management and employees perceptions regarding TQM adoption on the eight critical factors, One-Way ANOVA test was performed for each of the eight TQM critical factors. This analysis can help illuminate the direction and magnitude of change that both respondents experience with regard to their position in relation to each TQM critical factor. Therefore, it is important for hospital administrators to understand the effect of key critical factors on management and employees perceptions on TQM adoption. From the ANOVA results of Table 2, it is seen that six of the eight constructs namely, teamwork, management commitment, training and employee involvement results show statistically significant different means between management and employees perceptions at p = 0.01 level while continuous improvement and customer focus show significant differences at p = 0.05 level. The two critical factors that were not significantly different across all critical factors were: organizational culture and processes. For the hospital to adopt TQM, it must explore its goals, constraints, realities, customers' needs, employees' involvement as well as organizational culture. Therefore, for TQM to be successful and sustainable, the benefits of TQM must be visible to management and employees as well as to customers.

Table 2: Results of ANOVA

TQM critical factor		Mean	F-value
Teamwork	Management	3.23	22.24**
	Employees	3.78	
Continuous improvement	Management	3.89	14.52*
	Employees	2.45	
Management commitment	Management	3.71	17.56**
	Employees	2.21	
Training	Management	3.40	9.27**
	Employees	2.90	
Customer focus	Management	3.73	22.16*
	Employees	3.57	
Employee involvement	Management	2.58	4.20**
	Employees	3.21	
Organizational culture	Management	2.78	11.12
	Employees	2.90	
Processes	Management	3.01	1.25
	Employees	2.89	

Significance: *p < 0.05; **p < 0.01; *Table 2 shows management and employees perceptions mean differences on TQM critical factors. The results revealed six significant differences for the TQM critical factors.*

CONCLUSION

This paper examines TQM adoption in a public hospital using management and employees perceptions using eight TQM critical factors. The study shows that both management and employees have displayed some positive attitudes towards the adoption of TQM. Sustained improvements can come only through the commitment and participation of everyone involved. The student reveals that commitment for continual improvement from management is high, however, involvement of employees in the initiation of a corporate culture consistent with the TQM goals is lacking in the hospital. Developing a TQM culture has been found to be another key aspect of successful TQM adoption in the study. In this context it is worth mentioning that the organizational culture in the hospital has not undergone sufficient change at the current time. The adoption of TQM requires employees to reconceptualize the boundaries of their jobs, reshape their attitudes toward quality, and engage in new behaviors. Another key finding to the successful TQM adoption is the determination of customer's needs. Increase in TQM participation by management and employees will help in identifying their customers' needs and expectations. Management and employees' awareness of the customers' needs will help to move the hospital towards a customer-focused orientation. Even though process and organizational culture were not statistically significant, it does not mean that they are not important for TQM adoption. The hospital needs to invest its time and effort to develop foolproof methods and procedures. It is important that management demonstrate its commitment to the hospital processes and to provide the necessary resources to permit employees to participate in quality improvement activities. Therefore to make the public hospital more responsive to customers' needs while also improving its efficiency and effectiveness, the hospital has to adopt a TQM culture.

Limitations of the Study and Future Research

Since this study is considered as the first attempt to investigate TQM adoption in a public hospital in Mauritius, directions for further research are suggested. A detailed study of the critical success factors influencing the operational performance in the hospital is necessary. Another useful avenue for future research is to carry out a comparative study with other public hospitals to provide good insights on the effectiveness of TQM adoption and successful implementation. One important limitation of this study is that the results of this study are only valid for TQM adopters and give an indication of what performance can be achieved by service organizations that embark on a successful TQM program.

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ACKNOWLEDGEMENT

The authors would like to thank the editor and the anonymous reviewers for their constructive comments.

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THE INFLUENCE OF BRAND PERSONALITY EVIDENCE FROM INDIA

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ABSTRACT

Nokia tops the list this year among India's most trusted brands. The purpose of this research is to analyze the influence of brand personality of NOKIA to perceived quality. Approximately 214 respondents from a well known management institute are selected for this purpose. Respondents are asked to rate five dimensions of brand personality (sincerity, excitement, competence, sophistication, ruggedness) on a five point rating scale. Similarly, they are asked to rate the four dimensions of perceived quality on a three point rating scale. This paper will help marketers frame proper marketing strategies for the same.

JEL: M31

KEYWORDS: trusted brands, perceived quality, dimensions, sophistication, ruggedness

INTRODUCTION

The results of the 2009 India brand equity survey are surprising. Nokia tops the list among the most trusted brands category and Colgate, which topped the 2008 list was second. Many factors lead to the success of Nokia. Newspaper reports reveal that the quotation "Handle with care" fits well for the success of Nokia phones. The brand has been handled with lot of care and finally succeeded in maintaining and winning the peoples trust. The importance of brand personality in the Indian context is increasing with each passing day.

Brand personality is defined as the articulation of brand personality traits. According to Aaker (1991), "Brand personality is a set of personal characters associated and related with the brand." Jennifer Aaker defined brand personality as "a series of human characters associated with the brand". Brand personality has become an important tool for positioning brands in the market. It also acts as an important tool for formulating advertising policies and selling. There are various methods for measurement of brand personality. A popular methods is the brand personality scale developed by Jennifer Aaker (Acker, 1997). The scale takes into consideration 42 traits which are reduced to five dimensions; Sincerity, excitement ,competence, sophistication and ruggedness.

Perceived quality on the other hand is defined as the opinion which the customer forms about the ability of the product or brand to fulfill his or her expectations. Usually perceived quality is based on firms current public image, customer experience with the product and influence of opinion leaders and others. It is also defined as customer perception of the overall quality or superiority of a product or service with respect to intended purpose. The dimensions of perceived product quality include, reliability, durability, serviceability and style and design. The various dimensions of service quality include tangibility, reliability, responsiveness, assurance and empathy.

This paper seeks to analyze the influence of brand personality to perceived quality in India. The paper begins with a discussion of the relevant literature. The data and methodology and results sections follow. The paper closes with some concluding comments.

LITERATURE REVIEW

Little research exists in relation to brand personality and perceived quality. However, some relevant research appears in different field. Ke Xue (2007) conducted research on characteristics of mobile phones that had biggest influence to perceived quality. Ramaseshan (2007) investigated the moderating effect of the brand concept on the relationship between brand personality and perceived quality. Results revealed that excitement and sophistication dimensions are strongly related with brand personality.
A Study by Sung et al (2010) explained the relationship between brand personality dimensions, brand trust and brand effect. The study concluded that some brand personality dimensions relate directly to brand trust and some to brand effect. Louis et al (2010) also studied the effect of brand personality dimensions on three consequences: trust, commitment and attachment. The study uses nine personality traits.

Sponsor et al (2009) studied the impact of personality dimensions on brand association and brand attractiveness on a Thailand KFC and concluded that competence dimension are the most important influencing agent. Saptrashi (2009) conducted a study to analyze the brand personality for four brands in India. This study used the Aaker scale for analysis of four brands: Motorola, Raymonds, 7up and Samsung and concluded that 7up stood for sincerity, Samsung for innovativeness, Motorola for feistiness and Raymond for excitement.

Swaminathan et al (2009) conducted research to find out the role of consumer attachment on the impact of brand personality. It concluded that in situations of high avoidance, consumers prefer exciting brands and in situations of low avoidance consumers prefer sincere brands. Chu et al (2009) analyzed the brand personality of China. The results suggest three dimension of Chinese brand personality including and excitement and additional traits like traditionalism, joyfulness and trendiness.

Mulyanegara (2009) highlights the relationship between consumer personality and brand personality in fashion products. The conclusions differed by gender. Male respondents dominate on neuroticism and female's on consciousness dimensions. Gibbons (2009) analyzed the personality of banks on the basis of the Aaker (1997) scale. Thomas (2008) analyzed the personality of the Colgate brand using Aaker's (1997) scale.

Madrigal et al (2008) studied the social responsibility dimension as an important element of brand personality. The study analyzed social responsibility as one of the unique dimension of brand personality and has an equally important role in consumer's willingness to reward. Rathnayak (2008) studied the impact of brand personality and its impact on brand feelings among young television viewers in Srilanka. The study revealed that sincerity and excitement dimensions have an impact on viewer's feelings of warmth, security and appeal.

Ellis et al (2008) studied the effect of advertising music on perceived brand personality. The study revealed that brand personality dimensions does affect consumer responses. Another study by Swee (2006) studied the influence of metaphors and products on brand personality perception and attitudes. The study revealed that symbolic brands with methophorical advertising are considered to be more sophisticated and exciting.

Even though some research exists, there seems to be lack of research in this field that focuses on India. The study aims to fulfill the following objectives: 1) To identify the effect of brand personality on perceived quality. 2) To identify the if dimensions of brand personality have an impact on perceived quality. 3) To study the demographic characteristics of the respondents. The authors hypothesize that brand personality dimensions affect perceived quality.

DATA COLLECTION AND METHODOLOGY

Data from 214 respondents from a well known management institute are collected using a survey. The respondents are between 21-25 years and are dependant on their parents for income. The sample includes 95% males and 5% females. The survey was conducted in the classroom after the students are given an overview of what brand personality is and its various dimensions. The survey was administered by faculty in the area of brand management. Subjects are asked to rate the 42 traits of brand personality on a five point rating scale (1-strongly disagree, 5-strongly agree). Later, these 42 traits are categorized into five dimensions i.e., sincerity, excitement, competence, sophistication and ruggedness. Next, they are asked to rate the five dimensions of perceived quality on a three point rating scale including, reliability, durability, serviceability, style and design. The data is analyzed with the help of SPSS 12.0 software. Correlation analysis is used to identify the effect of brand personality dimension on perceived quality.

RESULTS

Table 1 presents descriptive statistics including mean and standard deviations for each of the brand personality dimension. For Nokia the mean of sincerity is (45.7356) and excitement (44.0854) indicating that sincerity and excitement have an important role to play for Nokia . The evidence indicates that sophistication and ruggedness dimensions do not play a strong role for Nokia. Because the sample consists primarily of male respondents, the results must be interpreted with care.

Table 1: Brand Personality Dimensions of NOKIA

Brand Personality Dimensions	Mean	Standard Deviation
Sincerity	45.7536	2.90007
Excitement	44.0854	3.57426
Competence	33.5265	5.58436
Sophistication	18.5682	2.30014
Rugged	18.0009	2.62594
Perceived Quality	14.000	1.63120

This table shows the mean and standard deviation of brand personality dimensions of Nokia .It also shows the mean and standard deviation of the perceived quality.

The correlation results are presented in Table 2. From the table it is clear that the competence dimension has the highest correlation with perceived quality. The ruggedness dimension has a negative correlation with perceived quality. Therefore, in case of Nokia the competence dimension affects perceived quality of customers followed by sophistication and sincerity.

Table 2: Correlation of Perceived Quality with Brand Personality Dimensions

Perceived Quality	Sincerity	Excitement	Competence	Sophistication	Ruggedness
1.00	.076	.059	.133	.098	-.041

The table shows the correlation between the various personality dimensions of Nokia with perceived quality.

CONCLUDING COMMENTS

This study examines the Brand quality dimensions of Nokia. A survey including 214 respondents was conducted to examine Nokia to identify how personality affects perceived quality of Nokia. The results show some dimensions of brand personality have a tremendous impact on perceived quality. Four dimensions of brand personality are positively related to perceived quality. The competence dimension of brand personality affects the perceived quality of Nokia mobile users to the greatest degree followed by sophistication. Ruggedness, on the other hand, has a negative correlation to perceived quality. These findings imply Nokia has endowed the brand Nokia with competence. The results indicate that Nokia should work to improve upon the ruggedness dimension.

The sample chosen includes respondents from a particular age group only. The choice of brands is limited and including only Nokia. Moreover, the sample included primarily male respondents hence the results should be interpreted with caution. More research should be conducted including a more diverse sample and more brands to make broader inferences. Research of similar nature can also be conducted on other brands in the trusted brands category.

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ACKNOWLEGEMENT

I express my thanks to my husband Philip, ITM Business School, my sister Sujata for helping me in writing this paper.

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ADVERTISING TO ADOLESCENTS: AN EXAMINATION OF SKEPTICISM

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ABSTRACT

Various studies have been done to further understand adolescent skepticism, its antecedents and consequences, and the affect of skepticism on the processing of advertising and persuasion attempts among adolescents. Given the substantial purchasing power and advertising dollars currently spent on this group, further understanding of this group is imperative. There appears to be a gap to bridge between marketing literature and developmental literature in dealing with this issue. This paper conceptualizes skepticism as a result of a developmental stage more than its current role as a dependent variable within the advertising and persuasion research context. A brief discussion of literature in the area of adolescents and advertising, and extant research on adolescent skepticism toward advertising is included. The conceptualization of the Skepticism-Dogmatic axis and its relation to advertising to adolescents is posited. Findings of previous studies are discussed with respect to findings of skepticism in adolescents. In light of previous findings and the obvious relevance of studying adolescents in terms of the characteristics of their developmental stages, this paper advances the idea that inclusion of developmental factors is should be an element of consideration in any future research which examines marketing to adolescents.

JEL: M37

KEYWORDS: Children, adolescents, skepticism, advertising, persuasion, epistemic development.

INTRODUCTION

Studies have shown that an average child will have spent almost 20,000 hours exposed to television programming by the age of 18 years (Kline, 1993). A significant portion of that programming time is devoted to advertising. Indeed, twenty-five years ago it was found that America's most naive viewers were exposed to between 22,000 and 25,000 commercials per year (Weisskoff, 1985). A 2006 policy statement from Pediatrics, the official journal of the American Academy of Pediatrics, indicates the current number of television commercials children are exposed to annually has doubled to over 40,000 plus an undisclosed number of internet ads (*Pediatrics*, Committee on Communications, 2006).

In addition to the pervasive nature of advertising in the lives of adolescents, also adding practical importance to this issue is the economic impact of the group. Marketers and advertisers also spend a large amount of resources marketing to the adolescent target market. The current body of literature regarding adolescent attitudes toward advertising is sparse at best, despite the staggering $200B in current U.S. purchasing power of the pre-teen/adolescent market (Kadaba, 2009). Additionally, advertisers spend $1.5B annually attempting to reach this market. With so many dollars being spent annually on this group, it is important that research in this area should be well-developed and rigorous. Current research regarding adolescents and pre-teens' response to advertising, with one or two exceptions, leaves out a very important dimension of the adolescent psyche: their developmental stage and the impact this has on researchers' ability to accurately assess adolescents' response to advertising.

Some might consider it unsettling that we know so little regarding how children think, feel, and develop knowledge with respect to such a controversial but pervasive influence. Several bodies of literature examine children's capabilities to cogitate, perceive, and understand the world around them. Stage-dependent cognitive development theories such as Piaget's Theory of Intellectual Development (Piaget, 1970; Piaget, 1972; and Siegel & Cocking, 1977), Perner's and Wellman's Theories of the Mind (Perner, 1988; Wellman, 1988; Wellman, 1990), and Boyes and Chandler's Theory of Epistemic Development (Boyes & Chandler, 1992) suggest that the development of knowledge, insight, and perceptual abilities are limited by a child's level of cognitive development. However, in business, marketing, and advertising literature, children’s cognitive and epistemic development is rarely taken into consideration. This paper seeks to underline the importance of taking these factors into consideration through an examination of both existing empirical research on advertising to adolescent children and skepticism as a characteristic of adolescents’ cognitive and epistemic development.

This paper is organized as follows. An introduction of extant literature is broken into two parts; an examination of the empirical research on adolescent skepticism toward advertising and a brief examination of epistemic development theory. Next a juxtaposition of the empirical studies and developmental theory is used to suggest that the empirical results suggest the developmental stage(s) of the adolescent subjects might be an underlying cause of the outcomes of the reviewed studies. Lastly, limitations of this paper and suggestions for future research are discussed.

BACKGROUND AND LITERATURE REVIEW

Of interest in the current study is the relationship between cognitive development, epistemic development, and skepticism toward advertising in adolescent children. Specifically, conceptualized in this research is the relationship between levels of skepticism exhibited toward advertising and the epistemic stage of skepticism-dogmatism in adolescents. Several studies including Isaksen and Roper (2008); Lee, Murphy, and Neale (2009); Martin and Kennedy (1993); and Moschis (1979) have examined the consumer behavior of adolescents and various related factors. Additionally, much research exists regarding skepticism toward persuasive attempts in adults (Batra and Ray, 1986; Beltramini & Evans, 1985; and Lessne & Didow, 1987). The antecedents and consequences of consumer skepticism have been studied (Chylinski, Chu 2010). Various factors have been studied in relation to their contribution to levels of adult skepticism toward advertising, including product category and consumer self-esteem (Prendergast, Liu, & Poon 2009). However, as has been widely posited and accepted, children’s behavior varies widely from behavior exhibited by adults (Rossiter, 1979; Donohue, Henke, & Donohue, 1980; Belk, Mayer, & Driscoll, 1984; Gorn & Florsheim, 1985; Macklin, 1985; Roedder & Whitney, 1986; Armstrong, & Brucks, 1988; Beale & Belgrad, 1990; and Moore 2004).

Adolescent Skepticism and Advertising

Extant literature on adolescents and advertising consists of several studies (Boush, Friestad, & Rose, 1994; Brucks, Armstrong, & Goldberg, 1988; McCallum, 1978; Martin & Kennedy, 1993; and Tolson, 2002) on children and adolescents. However, few studies focus on the adolescent group’s unique developmental characteristics.

An early study in this area, McCallum (1978) examined skepticism in the context of Inoculation Theory where children were shown short anti-smoking films in an attempt to increase skepticism toward smoking. This research, done in the context of de-marketing an undesired behavior and might be considered more in line with changing attitudes toward a product category than a measure of skepticism. However, results indicated that adolescents “inoculated” with anti-smoking knowledge exhibited a statistically significant increase in skepticism from those children not inoculated by the anti-smoking films (McCallum, 1978).

Brucks, Armstrong, and Goldberg (1988) also examined children’s ability to counter argue against advertising, thus decreasing their own persuasibility and increasing skepticism toward advertising. In this study, Brucks et al. (1988) provided empirical support that children diminish the credibility of advertisers, i.e. exhibit increased levels of skepticism, in order to avoid being duped. However, Brucks et al. (1988) also found that skepticism did not appear to negatively affect children's attitudes toward the product being advertised.

A seminal study in adolescent skepticism, Boush, Friestad, and Rose (1994) examined children's skepticism toward television advertising and knowledge of advertiser tactics. Boush et al. (1994) studied how knowledge of advertisers' tactics affected the attitudes of adolescents toward advertising claims. Results indicated that skepticism among adolescents about advertising is multidimensional, composed of a mistrust of advertisers' motives and disbelief in advertising claims. Boush et al. (1994) also suggested that adolescent skepticism precedes a more sophistic knowledge structure and that an adult view of advertising is not gained by the end of adolescence—the oldest subjects in the study were middle school aged-children.

Mangleburg and Bristol (1998) examined the effect of socialization on skepticism toward advertising in adolescents. Their study concluded that socialization has a strong, positive relationship to the level of skepticism exhibited by teenagers. Thus, this study provided additional empirical support for the idea that adolescents and early teens exhibit increasing levels of skepticism as they become more socialized.
Singleton Tolson (2002) examined differential levels of advertising knowledge among children. One finding of this study was the fact that the level of skepticism abruptly increased for twelve-year old children, with the highest levels exhibited by the 13 to 16 year olds group.

Given these studies, the extant adolescent advertising literature does indicate that varying levels of skepticism have been found in adolescents and increases between 12 and 15 years of age. Varying factors are posited to contribute to the levels of observed skepticism. Boush et al. (1994) posited that skepticism is multi-dimensional and increases with exposure to and knowledge of advertising. Brucks, et al. (1988) also posited that exposure to and experience with advertising increased skepticism. Mangleburg and Bristol (1998) advanced the theory that teens exhibit more skepticism as socialization increases, while Tolson (2002) recommended further study into the measurement and causes of skepticism in adolescents.

Developmental Skepticism in Adolescents

In accord with the research previously identified, there appears to be a simple explanation for the presence of sustained and increasing skepticism in children between 12 and 15 years of age. Drawing from cognitive and epistemic development theory, skepticism is more of a symptom of progression from one developmental stage to the next than an effect of some other factors interacting with the adolescent psyche.

Epistemic theory relates differential perspectives of the nature of "truth." There are various schools of thought regarding the nature of truth and knowledge: whether it can be verified, is affected by perspective, or can be truth simply based on legitimization. However, the development of epistemic outlooks in children is a literature within itself. Dealing with the differences in epistemic development among children of different ages has been related to cognitive development theories. In fact Boyes and Chandler (1992) advanced the Theory of Epistemic Development. This theory sets forth four developmental stages of children with respect to their perspectives on truth and knowledge. The epistemic developmental stages are related to cognitive stages of development and the ability of children to think abstractly.

In their study, Boyes and Chandler (1992) delineated the characteristics of the 12 to 15 year olds in their description of Level Two: The Dogmatism-Skepticism Axis of their developmental framework. The stated hallmark of reaching Level Two is the attainment of formal operational ability—the ability to understand abstractions and make increasingly sophisticated linkages and generalizations. This ability triggers the evolution of various childhood uncertainties into "generic doubts" about the general nature of truth and knowledge. Subsequently, these early teenagers come to recognize subjective content in the acquisition of knowledge and realize a relative characteristic to the nature of truth (Chandler, 1988). This often leads to bouts of "epistemological anarchism" (Feyeraben, 1976 cf. Chandler, 1988, p.409), when "…one is forced to reject all beliefs and reason, and look upon no opinion ever as more probable or likely than another (Hume, 1938 cf. Boyes & Chandler, 1992, p. 284). In response to the psychological discomfort inherent in an epistemological anarchism, adolescents choose to adopt one of two extremes on the "dogmatism-skepticism axis" (Boyes & Chandler 1992).

Table1: Summary of Boyes and Chandler's Theory of Epistemic Development

Age	Epistemic Stage	Hallmarks
4 to 7	Naïve Realism	Knowledge is a result of information and experiences Competing knowledge claims result from differential exposure to information
7 to 11	Defended Realism	Differences in opinion result from subjective bias
12 to 15	Dogmatism-Skepticism	Subjectivity in knowledge Relativity in what is held to be the "truth"
After 15 to adulthood	Post-skeptical Rationalism	Rational decision-making can occur without access to the unmitigated truth

This table provides an abbreviated summary of the stages of the Theory of Epistemic Development as set forth in Boyes and Chandler (1992). Children are theorized to have varying perspectives of the definition of "knowledge" and "truth" depending on their cognitive and psychological maturity. More information on each stage including the relationships to stages of cognitive development theory can be found in the full paper.

In the attainment of Level Two: Dogmatism/Skepticism Axis, 12 to 15 year olds go through what is commonly referred to as the adolescent identity crisis. During this well-documented crisis, adolescents are compelled to adopt an orientation of either dogmatism or skepticism. Adopters of the dogmatic end of the continuum commonly make "unexamined commitments to religion or scientism" in search of the "unmitigated truth" (Boyes & Chandler, 1992). On the other hand, skeptics take the stance that since no source of absolute truth is available, "all authority is undermined and all hope for rational consensus is lost." Therefore, everyone should be allowed to do as they please as individuals (Boyes & Chandler, 1992).

In moving from absolute acceptance of knowledge to unmitigated skepticism or dogmatism, children's outlook on persuasive attempts must also change. Regardless of the choice between dogmatism and skepticism, the common thread is that since all knowledge is humanly constructed, then all human knowledge is subjective. Chandler and Boyes wrote (1992):

"…the new talents for higher order abstraction and reflexive thought that constitute formal operational thought orient young adolescents in such a way that they have few alternatives but to peer into this pit [calling into question the existence of unmitigated, objective truth] of potential relativism. It is the specter of such generic or unassuagable doubts, we have argued, that prompts and guides a process of epistemic development aimed at eventually allowing young persons to act with confidence in a newly created world of wholesale uncertainty" (p. 283).

It is well documented that religious views (Desmond, Morgan, & Kikuchi, 2010) sexuality Leonard & Scott-Jones, 2010), views on politics and war (Blair, 2010) and other important aspects of children's lives change as they enter adolescence (Boyes & Chandler, 1990, 1992. It would stand to reason that one of the effects of this epistemic outlook is that advertising, persuasive attempts, and most other abstract and theoretical constructs are met with dogmatism or skepticism. At some point after age 15, late teenagers enter the Post-skeptical Rationalism stage in which they exhibit increased competence in the areas of reasoning and logic. This leads to their ability to act and make decisions even when the nature of truth and knowledge is uncertain (Boyes & Chandler, 1992).

RECOMMENDATIONS FOR CHANGE

As discussed in the literature review, several empirical studies have been done and found significant levels of skepticism in adolescent subjects. Various operationalizations, and antecedents and consequences have been posited in explanation of adolescent's demonstrated cynicism toward persuasive efforts. Based on the advertising literature as outlined, adolescent skepticism has been shown to vary with mistrust and disbelief of advertising claims (Brucks et al., 1988), increase with socialization (Mangleburg & Bristol, 1998), and be inversely related to ages between 13 and 16 years. One is hard-pressed to find any literature in which skepticism was examined in the 12 to 15 year age group and was found not to be present.

On the other hand, child development literature is very clear on one point with respect to adolescents. Children between the age of 12 and 15 are generally subject to the adolescent identity crisis, brought on by an epistemic shift. The hallmark of this shift is the appearance of dogmatism or skepticism toward ideas when it is not fully apparent whether or not the truth of the ideas might be subject to interpretation.

The goal of this manuscript is to underline what might seem to be obvious. A very simple alternative to the multivariate model of skepticism is found in child development literature. There might be less relevance in attempting to determine which variables, antecedents, and consequences account for the most variance in regression models than examining the epistemic maturity level of the adolescent subjects. The adolescent group is by definition skeptical and/or dogmatic. Adolescent skepticism is delineated in accepted developmental psychological, cognitive, and epistemic development theory as a known stage of development. In fact, many of us with children understand the concept of the "adolescent identity crisis" on many different levels.

Given the vast child development literature, it is suggested that future research on children--adolescents in particular—with respect to advertising, consumer behavior, or any aspect of marketing—take into account that they are indeed children. Thus, we cannot examine them separate from the issues that make them different than our adult subjects.

CONCLUSIONS

As previously stated, tweens' $200B spending power and the $1.5B spent on this group by marketers increases the relevance of future research on adolescents and advertising. It is also clear that future research on adolescent reactions to advertising will result in significant unclear results if cognitive and epistemic development is not taken into consideration. Additionally, skepticism and dogmatism are both a reaction to the adolescent relativist view, are closely related, and may also affect measurement of skepticism toward advertising and persuasive attempts. Therefore research into development of skepticism/dogmatism measurement scales for use on children might also be instructive in this area. Future empirical studies on advertising to children which measure or even take into account the psychological or epistemic development of adolescent subjects in their reactions to or belief in advertising would also serve to clarify this issue.

In light of the pervasive research in child developmental psychology, future research—including scale development, conceptual, and empirical research on children—should be conceptualized and validated not only based on marketing literature, but with developmental considerations in mind.

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EVIDENCE ON THE CONTENT OF PHYSICIAN WEBSITES

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ABSTRACT

We provide data regarding the current status and trends in physician website development. We surveyed over 200 family practices to determine whether or not they have a practice website. The results indicate that a majority of family practices do not have a website. We then conducted a detailed investigation of more than 60 physician websites to determine what kind of information, features and services are included in the websites. Our results indicate that there is a large gap between consumer preference for physician website capabilities and current websites.

JEL: M31

KEYWORDS: Physician website marketing, internet marketing, website development

INTRODUCTION

This paper examines the current status and trends in physician websites. The internet is a useful tool for service providers to market their services. In the world of health care there is enormous potential for internet use, especially with President Barack Obama advocating e-prescriptions and electronic medical records. The number of e-prescriptions last year nearly tripled from the prior year (Martin, 2010). There is also great potential for physicians to use the internet to communicate with and improve their relationships with patients (Sanchez, 2002). Consumer interest in the internet as a health resource is growing strongly. In a recent survey, more than half of the respondents indicated that they believe that incentives for doctors and hospitals to use electronic medical records will be effective or very effective at improving the overall performance of the health care system (Deloitte, 2010). In addition, current economic conditions are leading to pressure for the healthcare industry to cut costs and to justify every sales and marketing initiative (Gronlund, 2010). Physicians are beginning to understand that websites can be a good, cost effective way to attract new patients, provide better service and patient satisfaction, and maintain patient loyalty.

Some recent estimates say that 80% of American internet users regularly search the web for health information (LSW, 2010). However, there has been little research to help identify the information consumers want in physician websites to help them choose a doctor. Likewise, little research has investigated how websites might improve doctor service. Examining the content of physician websites is important because without a firm understanding of the content of physician websites, it is not possible to make recommendations for improvement. Once there is an understanding of the current status of physician websites, physicians can compare their websites to those others in the same industry and can better design their own websites for improved patient satisfaction and well as improved service and treatment.

We present the results of an investigation into the present status of physician websites. We surveyed more than 200 family practices to determine if they have a website. We then conducted a detailed investigation of over 60 physician websites, including determining if the websites contain the factors and services determined by consumers in a prior study (Sanchez and Sanchez, 2006) to be important. Our results indicate that there is a large gap between consumer preference for physician website capabilities and current websites. Finally, we present suggestions for future research.

The remainder of the paper is organized as follows. We first review the prior research. Then, the methodology and the results are described. Finally, we discuss the implications of the paper, factors constraining the development of physician websites, conclusions and suggestions for future research.

LITERATURE REVIEW

Recent statistics indicate that over 75% of North Americans use the internet (IWS, 2010). The internet is used extensively for advertising and marketing purposes. However, healthcare providers have lagged behind other industries in use of the internet for marketing and interaction with consumers (Rooney, 2009).

There is ample research on the use of the internet for health related issues. The internet is the primary venue for global health information exchange (Geissbuhler and Boyer, 2006). The majority of internet searches that are health related are for specific medical conditions (McMullan, 2006). Prior research indicates that most people who use the internet to access health information find the information to be both useful and helpful (Shaheen et al., 2008). In addition, most consumers find the online health information to be accurate (Bodkin and Miaoulis, 2007). Prior research has shown that consumers use prescription drugs' websites and find the information on the websites to be credible and comprehensive (Wymer, 2010).

According to recent research by the Pew Research Center, 35% of American adults use the internet to obtain information about doctors or other health professionals (PEW, 2009). There have been numerous articles on the potential for doctor-patient interaction via the internet (e.g. Klein, 2007; Adler, 2008; Bottles, 2009). Many studies indicate that while consumers may want to use the internet and email to communicate with their doctors, only a small percentage of consumers have actually been able to do so (e.g., McMullan, 2006; Bodkin and Miaoulis, 2007). While many articles suggest that consumers want more informative and interactive healthcare websites (e.g., Catallo, 2008), there has been little research to examine the current status of physician websites.

In a prior study, over 300 consumers were surveyed as to their use of physician websites and their preferences as to information and capabilities of physician websites (Sanchez and Sanchez, 2006). In that study, over 75% of the consumers indicated that they visit health care websites every two months or more, but only 37% indicated that they had ever visited a physician practice website. In that study, the participants indicated that ten factors would be important to them when visiting a physician website: Directions/map, office policies (i.e. cancellation of appointments, etc.), insurance plans accepted/payment methods, qualifications/credentials of physicians, practice philosophy, basic contact information (e.g., hours of operation), areas of specialization, forms to complete for first appointment (e.g., medical history), hospital affiliations, services provided beyond routine care (e.g., EKGs, stress tests, etc.). Of these, the consumers rated the following three as the most important when choosing a primary care physician: insurance plans accepted, physician credentials and basic contact information (e.g., hours of operation).

The same prior study identified twelve physician website features as potentially useful to consumers: Making routine appointments online, viewing lab results online, receiving email reminders for preventative care, refilling prescriptions online, participating in online health management programs, online practice newsletter, email consultations with your physician, getting routine HMO referrals online, monitoring vital signs at home and posting to personal webpage for physician review, links to useful healthcare sites, receiving follow-up email reminders after office visits (e.g., medication reminders), and viewing their own medical history/records online. Of these, in that study the consumers rated as the top three most important: prescription refills online, online referrals, and online access to medical records.

METHODOLOGY

The current study extends prior research by taking the ten factors identified in prior research (Sanchez and Sanchez, 2006) as being important to consumers when choosing a physician and the twelve factors identified as potentially useful to consumers and investigates how frequently they are currently available to consumers on physician websites. In the current study, we randomly selected 208 family practices from the east coast and called them to ask whether or not they have a practice website. Then, for the practices that do have a website, we visited their website to determine what information and services are available on the website. The results are discussed below.

RESULTS

Of the 208 practices surveyed, only 64 of them (31%) actually have practice websites. This is surprising given the high consumer interest in physician websites. For the 64 practices with websites, we examined their websites in detail. The most common information that was included on the websites were areas of specialization (94% of websites), directions and or map (89%) and qualifications/credentials of physicians (88%). Less than one third of the websites had office policies (re: cancellation of appointments, etc) (20%), hospital affiliations (30%) and services provided beyond routine care (e.g., EKGs, stress tests, etc.) (33%). Table 1 shows the frequency of occurrence of each of the ten factors identified in previous research as being important to consumers when choosing a physician.

Table 1: Frequency of Occurrence of Ten Factors

Website Information	Frequency of	Percentage
Directions/map	57	89%
Office policies	13	20%
Insurance plans accepted	43	67%
Physician credentials	56	88%
Practice philosophy	54	84%
Basic contact information (e.g., hours)	37	58%
Areas of specialization	60	94%
Forms to complete for first appointment	25	39%
Hospital affiliations	19	30%
Specialized services (e.g., EKGs)	21	33%
n=64		

This table shows the frequency of occurrence of ten factors indentified in previous research as being important to consumers. The first column lists how many of the 64 websites investigated contained each of the ten factors. The second column expresses this figure as a percentage of the total 64 websites.

Interestingly, basic contact information was rated by consumers as one of the most important factors to be included on a website when choosing a physician, yet only 58% of our sample with websites had that information on their website.

Consumers rated insurance plans accepted as one of the most important factors, and yet only about two thirds of our sample (67%) with websites included this information on the website. We found it surprising that more physicians did not include this information since it would likely be one of the first questions a potential patient would have. The majority of physicians in our sample did include their practice philosophy on their website (84%).

A simple idea that has the potential to save physician practice employees time is to have the necessary forms to complete for the first appointment online, and then patients can print them and fill them out, then bring them to their appointment. However, only 39% of our sample offered this Table 2 shows the frequency of occurrence of the twelve physician website features/services potentially useful to consumers. Prior research indicates that all twelve of these services potentially influence consumers' satisfaction with their physician. However, all of these twelve services were either rare or nonexistent. The most commonly present feature is links to healthcare sites (44%).

The two next most common features are ability to make routine appointments online (19%) and online practice newsletter (17%). In prior research, consumers rated the following features/services as most important to them: prescription refills online, online referrals, and online access to medical records. However, these three features/services were some of the most infrequently occurring: prescription refills online (5%), online referrals (0%), and online access to medical records (3%). Only a very small portion of the websites we investigated offered online health management programs (3%) and the ability to view lab results online (3%). None of the websites we investigated offered at home vital sign monitoring.

According to the Wall Street Journal, some health insurers, including Aetna Inc. and Cigna Corp., now pay doctors to treat patients virtually (Mathews, 2009). However, in our sample of physicians with websites, only 6% of them offered email consultations. None of the websites in our sample offered follow-up email reminders after visits and none offered email reminders for preventative care.

Table 2: Frequency of Occurrence of Twelve Features/Services

Website Services	Frequency of	Percentage
Making appointments online	12	19%
Viewing lab results online	2	3%
E-mail reminders for preventative care	0	0%
Refilling prescriptions online	3	5%
Online health management programs	2	3%
Online practice newsletters	11	17%
E-mail consultations with physicians	4	6%
Online referrals	0	0%
At home vital sign monitoring	0	0%
Links to healthcare sites	28	44%
Follow-up email reminders after visits	0	0%
Online access to medical records	2	3%

n=64 This table shows the frequency of occurrence of twelve features and services indentified in previous research as being important to consumers. The first column lists how many of the 64 websites investigated contained each of the twelve features/services. The second column expresses this figure as a percentage of the total 64 websites.

DISCUSSION

We found the number of practices without a website to be quite surprising, especially given the demand for it from consumers and also the ease of creation. There are many companies that will create a website for physicians. These companies will do everything including design the website, design a logo, host the website, manage the website, create online patient forms and online bill pay, and the companies even promise to make the website rank high on search engines such as Google.

In addition, some physician organizations have programs in place that allow individual physicians or practices to build a website. For example, the American Academy of Orthopedic Surgeons, as a benefit of membership, allows physicians to create websites that have a photograph, educational background, information on board certification, focus and affiliations, office location(s), hours of operation, and insurance plans accepted. On the website, the physician can include a personal message that describes the practice and practice style, a Google map of the primary office location and other information (See http://orthodoc.aaos.org/pows.cfm.)

Although physician websites are here to stay and likely will play a greater role in health care delivery in the future, it is apparent that much more development needs to take place in this area. While it can be said that physician websites currently play some useful but limited role in our health care system, the small percentage of practices having websites is surprising when compared to website development in other fields. Moreover, the sophistication of the websites we reviewed is woefully inadequate given both consumer preferences and the capabilities of website technology. Our impression of many of the websites we researched is that they are merely little more than online replications of printed materials such as office brochures. Websites varied greatly, and it appears to be entirely up to the physician as to what information they choose to disclose on their websites. Few offer interactive capabilities that are likely to improve consumer satisfaction and lead to greater efficiency in health care delivery.

FACTORS LIMITING THE DEVELOPMENT OF PHYSICIAN WEBSITES

Anecdotal evidence uncovered in the course of our research indicates several factors limiting the development of physician websites. First, many physicians are yet unconvinced that website technology can improve their ability to deliver health care more effectively. For most physicians, website technology represents a dramatic shift in the point of care and the subsequent reduced need for patient contact. Here, behavioral changes will be required both on the part of physicians and consumers.

Physicians will need to overcome their broad generalization that quality of care will be reduced with less patient contact. They will need to learn which aspects of their practices can be adapted to website technology. Most physician-patient interactions will still require "hands on" physician contact. Yet many interactions can actually be improved with website technology. For example, patients requiring long range therapies such as blood pressure monitoring can be sent periodic email reminders regarding the importance of taking their medication according to the physician's orders.

This may actually improve compliance, the lack of which is a common problem with long range therapies. Furthermore, the technology now exists for patients to monitor their blood pressure at home and have the results transmitted electronically. This eliminates the need for frequent office visits for routine monitoring. Patients also will need to undergo behavioral changes in order to effectively make use of website technology. For example, while physician email consultations can be useful, patients will need to learn the limitations of such contacts. In short, website technology is still in its infancy as far as the abilities of both physicians and patients to use it effectively.

Another factor related to the previous is physicians' concerns for their bottom lines. The current belief among many we surveyed is that developing, operating, and maintaining a website will not be cost effective. Here physicians will have to look long range. While initial start up costs may be significant since they include not only development of the website but staff training as well, the longer range benefits are apparent. Not only is there the potential to reduce errors since patient records can be electronically stored and transmitted among many providers, but the potential to reduce the need for staff is significant. Several physicians we encountered commented that they require four to five staff members just for scheduling appointments, answering phones, HMO referrals, and prescription refills. These are, in fact, relatively minor transactions which have the potential to be handled with website technology.

Physicians were also concerned with privacy issues and the perception of increased medical liability. Many believed that the transmittal of sensitive medical information electronically raises the potential for unauthorized third parties to gain access to this information. We believe this to be largely a perceptual issue since no evidence exists that this has been the practice. Indirectly related to this issue is physicians' concerns with the potential for increased medical liability for medical errors related to website transactions. Here again, there is no evidence that this has occurred, although it is an important question which will be required to be addressed.

Finally, many physicians also indicated that they saw no immediate need for websites since most of their patient profiles included older population segments without much exposure to internet technology. Some physicians we spoke with expressed concern that they would not be reimbursed for electronic doctor-patient communications. Moreover, many patients are ingrained with a more passive role in their interactions with health care providers. For them, face-to-face contact with physicians is likely to remain their preferred method of seeking medical treatment. In the near future this is likely to change as the more educated and technology savvy baby-boomers retire and approach the years where they require more health care.

CONCLUSION AND FUTURE RESEARCH

The goal of this paper was to examine the current status and trends in physician websites. We surveyed more than 200 family practices to determine whether or not they had a website. Only 31% of those surveyed actually have websites. For those practices who do have a website, we examined the websites in detail. We searched for ten specific factors and twelve specific features/services that were identified in a prior study to be important to consumers. We found that most websites lacked many to most of the factors and features that consumers desire. Some of the websites even lacked basic information such as directions or a map to the office. We did not encounter a single website that had all of the information and capabilities that consumers have indicated they would like.

This study is limited in that the sample consisted of only approximately 200 family practices in the east coast. Clearly, there is a need for much more research in the area of physician website marketing. Future research could investigate differences between urban and rural practices, as well as the differences between specialties and larger versus smaller practices.

Other research questions include: How can we convince physicians that practice websites can improve their bottom line as well as improve health care delivery? Would consumers actually utilize website technology in seeking health care? Can concerns such as privacy and medical liability be overcome? Will social media such as Facebook and Twitter be useful tools for physician marketing? We hypothesize that the benefits offered by website technology are too powerful to preclude rapid future development in this area.

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INFORMATION TECHNOLOGY USE PATTERNS: EVIDENCE FROM ALBANIAN ENTREPRENEURS

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ABSTRACT

This paper examines the level of IT usage by companies in the Albanian commercial centers. The paper provides an discussion of the relevant literature on the importance of adapting information technology (IT) by entrepreneurships in a given country. Specific application to some specific businesses are provided. The paper examines large firms because of their increasing presence in the economy, their vital role in rural development and their importance to the country's economic, social and general welfare. The paper identifies the main reasons for entrepreneurships use of IT. The paper identifies an important issue considering growth trends of the domestic market and relationships with other non-Albanian companies, that have already applied IT solutions. The paper identifies efficiency and effectiveness levels of Albanian companies and the impact of customer demands for service quality.

JEL: M15; O32

KEYWORDS: IT, entrepreneurship, marketing, commercial center

INTRODUCTION

Information and Communication Technology (ICT) is an important part of society and an integral part of the international business world. Forrester Research predicted that ICT transactions worth \$6.8 trillion were likely worldwide in 2007. Nevertheless, large segments of the international trade world do not use the Internet. This is certainly to change. This paper examines to Albanian entrepreneurs. The paper conducts a survey of how the internet has improved their business operations, processes, financial systems, etc. The number of native enterprises that use ICT for daily tasks is growing at an exponential rate. These trends signify this is not a casual or a short-term phenomenon. The goal of this paper is to provide feedback to Albanian entrepreneurs on the use of IT by Albanian businesses. Though there is a large amount of literature regarding this and similar topics worldwide, this is not the case for Albania. This paper is the first known attempt to address specific issues related to Albania.

In the following section, we discuss the literature related to the topics in question. Section 3 introduces the data selected and research methodology used, while Section 4 gives a more detailed analysis and interpretation of the data. Section 5 provides concluding comments and further implications of the study.

LITERATURE REVIEW

Berthorn, Pitt and Warson (1996) stated that most companies worldwide could not estimate properly the huge potential that the World Wide Web offered as a alternate marketing tool. While internet usage was increasing exponentially, its effect over the marketing process and overall economic activity was as yet unknown. On the other hand, Lichtenthal and Eliaz (2003) argue that IT usage, especially internet usage, would help firms create certain traffic for their products and services, thus building their name in the online environment.

Companies and their managerial staff can find themselves in the same situation today if they do not properly promote themselves online. Kloesch (1995) noted that online firms need to promote their business in the traditional media. Entrepreneurs should not assume customers will see their online products and then choose them. Instead, Kloesch stressed the importance of promoting themselves in a broad range of distributed daily media. Ranchlod and Tinson (2009) provide some important insights concerning the online application of traditional promotion principles. A strategy, that includes distribution of products and services to a large number of potential clients, did not have the same success when applied on the Internet.

Kotler (2009) sustains that companies need a huge amount of information in order to fulfill the needs of their customers. He further concludes that IT usage improves the process of data collection and therefore has a considerable impact on customer-oriented entrepreneurships worldwide. In addition, Zimmerman (2003) identifies an important correlation between the database and the efficiency observed in the delivery process of several companies. Thus, he concludes that online services and online sales in general shall benefit from gaining access to the databases mentioned above.

Entrepreneurs can use the Internet to enhance their operations internationally, or to work in an efficient manner to help them in their development of international e-Commerce strategies. The digital age offers significant opportunities to both consumers and businesses. In fact, the Internet or even ICT services, provides access to a worldwide market for companies of all sizes. It is hard to avoid reading any business magazine without a discussion of how the Internet has influenced business outcomes and processes. It is widely accepted that Internet usage is a competitive necessity for survival of firms, as shown in Figure 1.

To paraphrase a well-known saying: big firms are not like small firms; they have more money. Big size alone offers some protection against the effects of bad decisions that are not available to small firms. Small firms must take advantage of their ability to move quickly and firmly establish their presence in an international e-Commerce business before larger firms close this window of opportunity.

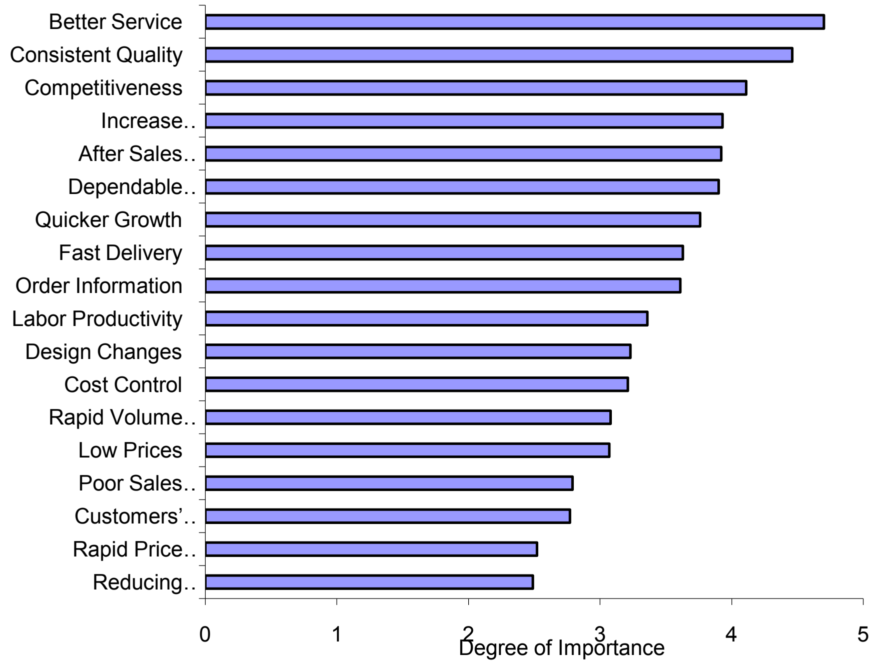
DATA AND METHODOLOGY

This paper provides a discussion and interaction between a detailed literature review, on the importance of adapting the information technology by entrepreneurships in a given country, and a specific application by some entrepreneurships. The methodology consists of using both questionnaires and analyzing the problem through a case study, which examines large businesses in Albania. The survey instrument is presented in the appendix to the paper.

Albanian commercial centers were selected for examination in this study. They involve a new business idea, they include several businesses in their operating area and their approach to technological development is at a high level. They also include international brands which involves interaction with foreign staff's that work at top managerial levels. Thus, these businesses have complex structures. This case does not consider small and medium size companies. We developed a questionnaire consisting of four sections as follows: I) a general overview of the company II) identifies the way companies use internet services, III) shows how companies' staff and management apply marketing strategies and concepts over the internet and IV) provides information about the IT solutions used by the companies

In this research, we collect data from Albanian entrepreneurships classified as commercial centers. The data collected includes general information regarding ICT use patterns in the businesses. We analyzed over 100 companies. Only 78% of the sample interviewed responded including more than 150 persons. These persons belonged to the managerial staff of the companies. The authors conducted the survey during a 2-month period in 2009.

Figure 1: Reasons for E-commerce Use



This figure shows reasons why businesses choose to do business through IT. The main reason seems to be related to quality improvement of services offered, accompanied by a considerable level of consistence and of course the necessity for competitiveness in a growing market.

RESULTS

The survey results are presented in Table 1. The results are presented separately for each section of the survey.

<u>Section 1: Type of Business and Performance</u>

This section reports the results questions regarding the type of businesses and performance. Just under 88% of the companies have been in business for more than one year and nearly 68% of them were run locally, mostly in Tirana. More than half of the companies use up-to-date technologies and this increased the sales and quality for their products and services. About 96% of the companies have a website, 80% of whom have not had difficulties with spending for internet and online services.

The enterprises focused mainly on marketing the most necessary products/services, facilitating the way a company fulfills customer needs. The biggest share of products are related to household appliances (34%) and supermarkets (32%). Following are clothing stores and accessories, both with an 8% share. Some 18% of the products/services share are in the other category.

Regarding technological development, almost 72% of the companies state that they are entirely concerned with the newest trends in technology, which includes working with up-to-date software, offering digital services and up-to-date equipment. Their main priority is being familiar with technological innovations,

especially regarding IT. Other companies were not particularly interested in these developments. The main reason for this lack of interest is that they already have a certain share in the market, they have loyal customers. Perhaps more importantly, they do not want to change their traditional way of doing business, including face to face communication with customers. Managers admit that IT helps the business in a considerable way.

Table 1: The Survey Data

Nr	Question	Respondents
	Section I	
1	What Type of Products/Services does your Business offer?	
	Household	54
	Supermarkets	50
	Clothing	12
	Accessories	12
	Alternative	28
2	How long has your Company been operating?	
	Less than a year	6
	A year	12
	More than a year	138
3	Does your Business run locally? If so, would you consider expanding in a National Level?	
	Yes	106
	No	50
4	How familiar are you with the Latest Technological Developments?	
	Not interested	12
	Sufficiently	32
	Entirely familiar	112
5	Did the Application of IT contribute to the Quality of Products/Services?	
	No Influence at all	0
	Sufficiently	32
	Yes, with a strong Impact	124
6	How much did IT contribute to the Sales Level?	
	Minor Increase	18
	Major Increase	138
	Section II	
7	Does your Company have an official Website?	
	Yes	6
	No	150
8	Did the Internet Service require High Expenses?	
	Yes	32
	No	124
9	Did you do some Research over the Ability or Willingness of your potential Customers towards using the Internet for Information, Help or Retrieval?	
	No Research	32
	A previous Study was adapted	80
	Yes, we did our own Research	44
10	In what Language is your official Website available?	
	Albanian	74
	English	52
	Other	30
11	Do you have any Unusual or Special Products that Customers are not familiar? If so, does publishing on Internet help you on this Issue?	
	Yes, most of our Products/Services are such	18
	Just a few Items	18
	No, our Products are easily reachable	120
	Section III	
12	What is the average Number of Customers arriving at your Commercial Center daily?	
	Less than 500	44
	500-1500	12
	More than 1500	100
13	How much does a Customer spend daily on average at your Commercial Center?	
	Less than $15	12
	$15-$25	62
	More than $25	82
14	Which of the following are the main Purposes you achieve through the Internet Service?	
	Advertising	48
	Information over Products or Services	46
	Building sustainable Relationship with the Customers for the Future	16
	Comments and Feedback	20
	Recruiting new Employees	10
	Online Sales of Products and Services	10
	Observing the Sales Trend	6
15	What is the Share of Online Sales regarding Total Sales?	
	Less than 10%	88
	10%-50%	24

Nr	Question	Respondents
	More than 50%	44
16	Did you consider the Option of turning your Business to an Online one?	
	No, because it is not profitable for my Business Type	18
	No, because the whole Service Idea would get lost	118
	Yes, because it is Cost-Minimizing	4
	Yes, because the Future will bring Electronic Markets only	16
17	What is the average Period of Time when your Company fulfills the Online Orders?	
	Less than a Day	70
	Less than a Week	68
	More than a Week	18
18	Does your Company offer Online Assistance to the Customers?	
	Yes:	88
	Price Catalogs	*28*
	Guarantees	*28*
	Special Offers	*28*
	Other	*4*
	No	68
	Section IV	
19	How many of your Employees have good Computer Skills?	
	Less than 30%	24
	30%-50%	8
	More than 50%	46
	100%	78
20	Which Communication Medium do you use mostly with your Suppliers?	
	Telephone/Fax	52
	Email	52
	Face-to-face Communication	52
21	Explain how did implementing IT Equipments (such as Alarm Systems, Survey Systems or Fire Alarm Systems) contribute in the Business Activities.	
	Positively	156
	Negatively	0
22	Does your Company have a Database with the proper Information over Products (Prices, Serial Number, Inventories etc.)?	
	Yes:	156
	ISID	*30*
	FINANCA 5	*46*
	ACCESS	*28*
	GOLD	*36*
	WINSTORE	*16*
	No	0
23	What part of the Annual Revenues goes for the R&D Process in your Company?	
	None	44
	1- 3%	88
	More than 3%	24
24	Research is mainly focused in:	
	Improving the Quality of existing Products and Services	70
	Creating new Products and Services	86
	Other	0

This table shows the survey results. The sample consisted of 156 high-level Albanian commercial center managers. The results shown indicate the number of respondents in each category. Each of the questions sum to 156 responses. The survey was conducted during 2009.

Applying IT helped the Albanian businesses be effective and efficient. Almost 80% of the interviewed sample acknowledged this, adding that it has rapidly raised the quality of their products and services. Through the internet, managers have a bigger chance to understand customers' needs, how services should be offered and to whom. Interestingly, 88% of respondents stated that changes in business activities resulting from IT solutions, had a positive impact on sales. Service and support before and after purchase have become easier and more comfortable for customers. Other respondents stated that the impact was of no importance. They think their business is strong enough to ignore technology, especially in the sales sector.

Section 2: Internet Use as the Innovative Element of Communications Strategy

This section reports results of questions regarding internet use, as the innovative element of communications technology. About 96% of the companies have an official website, 80% of whom have not had difficulties with spending for internet and online services. Only 20% of the managers stated that their companies have not conducted research regarding customers' ability or willingness to use the internet. The websites are mostly available in the native language. Generally, the products of these centers are easily reachable.

While the majority of companies have their official website, few offer online sales. Almost 96% of the companies used the website as a marketing tool. The website also helped in recruiting new people and in sharing information and getting feedback. The rest of them did not have a website, since they do not apply online sales. They also want to advertise, recruit people, and communicate with their customers in a direct way, not using online services. Most internet services required affordable expenses. Only around 20% of the companies obtaining funding when they decided to spend for additional internet services. They are using these services and, as time passes, there will likely be major benefits from this decision.

Customers can use the internet service to find products, get help, or obtain additional information about companies. Nearly 28% of the commercial centers have done some preliminary research regarding this issue. Companies representing 20% of the total did not do any research at all. The majority of the companies adapted some already available research study, which turned out to be very helpful. As their managers indicate, towards a higher quantity and quality of sales.

Official company websites are generally available in several languages. The most frequent is Albanian, chosen because the majority of customers are Albanian. Slightly more than one third of the firms, have an English website, trying to expand to an international level. The rest of the companies use Italian and Greek languages to attract customers, since their main activity frequently occurs in these countries.

Customers are aware of most products offered in commercial centers. The products are easily reachable and do not need internet publication. The majority of this type of businesses focuses in well-known products and on improving their image rather than selling unknown products. However, nearly a quarter of the sample has such products. Managers believe that customers prefer this type of product and it will have a positive impact on the company's image and profits. The internet is a big help for the promotion of these products.

Section 3: Marketing Techniques and their Application on the Internet

This section focuses on questions about marketing technique, principles, strategies and their application on the internet. The centers had nearly 1,500 visitors per day spending on average more than $25. This implies significant revenues for the centers. At the same time, companies invest only 1-3% of total revenues for Research & Development (R&D) towards creating new products and improving existing ones. The main purpose of company websites for the customers was availability of information about products, services and the advertisements they showed. Online sales have a small share, less than 10% spread through a few centers. Online businesses are far from reality for the Albanian environment based on the results found here. However, distribution of online orders and online assistance have reached a satisfactory level. Since commercial centers are a new business idea in Albania, they are attractive to customers. Many centers established recently do not have a large number of customers. Customers are willing to spend on average less than $15 per day in nearly 8% of the commercial centers they visit. Moreover, 40% of the total customers spend between $15 and $25 per day.

Sample companies mainly use their websites for promoting products and sharing information about products and services, representing respectively 31% and 30% of the total. Nearly 13% of all firms use their websites to receive feedback regarding their activity and products. About 10% of these companies use their websites to build sustainable customer relationships. The later results are impressive, considering that part of the companies use their website to recruit new employees, for online sales or to observe the sales trend is even smaller.

Most of the companies achieve online sales at a level below 10% of total sales. This shows there is still much to do for these centers to not only advertise their products online, but also to sell online. Interestingly, 16% of the companies achieve a sales level between 10% and 50% of total sales through online services. The other companies are capable of achieving an even higher level of online sales, because of the international level of their activities and their large market share.

Around 76% of the companies indicated they would not be able to move their entire sales operations online. The main reason is the unique service idea that makes them famous, would get lost. Nearly 12% of company managers see this kind of transformation as non-profitable but 2% of them think doing so would reduce their costs. The remaining managers say that digitalization in recent years would be positive if applied in the commercial centers. Therefore, it would completely avoid face-to-face communication between customers and clerks or entrepreneurs and clerks.

With regard to sending preordered products to online customers; it seems that the companies are generally in line with customer expectations. Companies fulfill around 45% of total orders in one day and another 45% within one week. This quick response encourages customers to buy other products. The remaining orders, fulfilled in more than one week, are commonly because of large distances or incorrect destination addresses. All the companies aim to stay in touch with their customers helping them make the best choice purchase. For them, a client that is satisfied with the delivery speed means one or more future sales.

Several companies offer online assistance to customers. Nearly 44% of them have done it and offer this service mainly for product guarantees, special offers and price catalogs. This assistance can bring the companies nearer to their customers.

Section 4: IT Solutions Utilized

Next, we identify IT solutions used in the commercial centers. Their staff had very good computer skills, using databases like Finance 5, Isid, Gold, Access, Winstore etc. In order to communicate with their suppliers, the staff uses telephone, fax, e-mail or simply face-to-face conversations. Other examples related to IT equipments are alarm systems, survey systems, and fire alarm systems.

The survey then inquired about Managers opinion of staff computer skills. In almost 50% of the cases, managers indicated their staff had very good computer skills. Thirty percent of managers answered that more than 50% of their staff had sufficient computer skills. The results showed that employers are very interested in having a qualified staff for their work teams.

There was a small difference between such mediums used to contact suppliers. Firms used telephone, email, or face-to-face conversations. Companies and their staff used online communication often, but not much more than the other mediums. Face to face conversation is still important for many managers, because it is seen as the most infallible way to share ideas, experience, requirements etc.

Managers seemed to be sensible toward implementing IT equipment, and were convinced that such equipment, apart from computers and software, have a positive impact on business activity. The alarm systems have contributed to increasing safety; meanwhile survey systems resulted in efficient employee supervision and customer communication.

All the commercial centers have a database with information needed for each product or service they sell. This shows they follow each other and know how to behave in a competitive market. The most common database software Finance 5, mainly due to ease of use. Isid, Gold and Winstore are other software used. MS Access is the software used by only 10% of the companies, since it is not appropriate for many.

In 28% of the cases, companies use no money for R&D processes. Nearly 56%, spend less than 3% of their revenues for R&D. The remaining managers, knowing that this process is very profitable for current and future periods, are willing to spend more than 35% of revenues for R&D. It is important to invest now in order to gain more profits in the future. The research focused mainly in creating new products, denoted by 55% of the total sample interviewed. The remaining part focuses research towards improving the quality of existing products.

CONCLUDING COMMENTS

The survey results indicate a majority of entrepreneurs are aware of the need for adapting to the digital world. The Internet has had a pervasive effect throughout the business world in commercial centers. Entrepreneurs are rushing to the Internet to reach new markets. While companies use e-commerce for advertising, business-to-consumer and business-to-business transactions, entrepreneurs encounter several challenges. We conclude that there are both opportunities and challenges, posed by the use of ICT services.

Findings from this research indicate that IT services are growing at such a rapid rate in Albania that many opportunities will exist for commercial centers in the near future. There is always room for new innovative ideas and products for commercial centers, we feel that low barriers to entry and increasing levels of competition will drive prices and profits down, making it increasingly difficult to survive.

Overall the results of this study lead to the following conclusions. The small differences that Albanian Entrepreneurships and Commercial Centre demonstrate result in a bigger difference related to using IT. Brand new companies entering the market try to have a competitive advantage by benefiting from the IT solutions they apply to their everyday activities. They try to earn a bigger market share by using IT as a strategic marketing tool. Meanwhile, other companies try to keep up with the latest IT developments.

The commercial centers are branches of bigger centers which helped them apply their technology.
Their staff had good computer skills, including with database software like Finance 5, Isid, Gold, Access, Win store etc. In order to communicate with their suppliers, the staff uses mediums like telephone, fax, e-mail or face-to-face conversations. Other examples related to IT equipment are alarm systems, survey systems, fire alarm systems that have had a significantly positive impact on business activity.

The managers of these centers noted that their companies spend 1-3% of revenues for Research & Development. This suggests they should move to using up-to-date technologies. On the other hand, the Albanian customers are not ready heavy IT usage. Thus, a balancing act is necessary.

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APPENDIX

Appendix A: Survey Questionnaire

Section I

1. What type of products/services does your business offer?

2. How long has your company been operating?
a. Less than a year
b. A year
c. More than a year

3. Does your business run locally? If so, would you consider expanding in a national level?
a. Yes
b. No

4. How familiar are you with the latest technological developments? (software, digital services, up-to-date equipments)
a. Not interested
b. Sufficiently
c. Entirely familiar

5. Did the application of IT contribute to the quality of products/services?
a. No influence at all
b. Sufficiently
c. Yes, with a strong impact

6. How much did it contribute to the sales level?
a. Minor increase
b. Major increase

Section II

1. Does your company have an official website?
a. Yes
b. No

2. Did the internet service require high expenses?
a. Yes, it required high expenses
b. No, it required affordable expenses

3. Did you do some research over the ability or willingness of your potential customers towards using the internet for information, help or retrieval?
a. No research
b. A previous study was adapted, according to our needs
c. Yes, we did our own research

4. In what language is your official website available?
a. Albanian
b. English
c. Other ________

5. Do you have any unusual or special products that customers are not familiar? If so, does publishing on internet help you on this issue?
a. Yes, most of our products services are unusual
b. Just a few items are such unusual
c. No, our products are easily reachable

Section III

1. What is the average number of customers arriving at your commercial center every day?
a. Less than 500
b. 500-1500
c. More than 1500

2. How much does a customer spend daily on average at your commercial center?
a. Less than $15
b. $15-$25
c. More than $25

3. Which of the following are the main purposes you achieve through the internet service?
☐ Advertising
☐ Information over products or services
☐ Building sustainable relationship with the customers for the future
☐ Comments and feedback
☐ Recruiting new employees
☐ Online sales of products and services
☐ Observing the sales trend
Other ______________________________

4. What is the share of online sales regarding total sales?
a. Less than 10%
b. 10%-50%
c. More than 50%

5. Did you consider the option of turning your business to an online one?
a. No, because it is not profitable for my business type
b. No, because the whole service idea would get lost
c. Yes, because it is cost-minimizing
d. Yes, because the future will bring electronic markets only

6. What is the average period of time when your company fulfills the online orders?
a. Less than a day
b. Less than a week
c. More than a week

7. Does your company offer online assistance to the customers?
a. Yes
If yes, regarding:
- *Price catalogs*
- *Guarantees*
- *Special offers*
- *Other*

b. No

Section IV

1. **How many of your employees have good computer skills?**
a. Less than 30%
b. 30%-50%
c. More than 50%
d. 100%

2. **Which communication medium do you use mostly with your suppliers?**
a. Telephone/fax
b. Email
c. Face-to-face communication

3. **Explain how did implementing IT equipments (such as alarm systems, survey systems or fire alarm systems) contribute in the business activities.**
____

4. **Does your company have a database with the proper information over products (prices, serial number, inventories etc.)?**
a. Yes: Name the program: ________
b. No

5. **What part of the annual revenues goes for the R&D process in your company?**
a. None
b. 1 - 3%
c. More than 3%

6. **Research is mainly focused in:**
a. Improving the quality of existing products and services
b. Creating new products and services
c. Other _____________________________

ACKNOWLEDGEMENT

The authors would like to thank the anonymous reviewers for their grateful comments, thus resulting in a considerable change and significant improvement in the quality of this paper.

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NEW EVIDENCE ON RATES OF RETURN TO EDUCATION IN PAKISTAN

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ABSTRACT

Relatively few articles have examined the rates of return to education in Pakistan in recent years. This paper uses data from the 2001-02 Pakistan Integrated Household Survey to compute returns from different levels of education. Returns to education are found to be higher for females than for males at the lowest level of schooling. The results presented here support the findings of other researchers. In addition the result have significant policy implications for educators and policymakers.

JEL: J24; J31

KEYWORDS: Education, Returns, Pakistan

INTRODUCTION

After a flurry of studies in the 1970s and 1980s, there appears to have been a barren period in which little attention was directed towards computing rates of return to education in Pakistan. Recently however, some studies, both published and unpublished have investigated this important area. This article updates, and provides comparisons with the results of some of these studies. Most of these studies, including this one, determine that the returns to females are higher than they are for males. This is a finding with considerable policy significance.

Pakistan is estimated to have a population of approximately 160 million. The labor force participation rate is 46%, reflecting the large number of children in the population who cannot work. The participation rate is only 19% for women. This is not surprising, given the social and cultural factors which often prevent women from engaging in paid employment. Agriculture is the mainstay of the economy accounting for 43% of all employment. The unemployment rate of 6.2% reported officially, is widely regarded as being significantly understated. As much as 73% of employment outside agriculture is in the informal sector, which is largely unregulated and untaxed. The literacy rate is 53%, but is only 40% for women.

This paper uses data from the *2001-2002 Pakistan Integrated Household Survey* to compute reported results. While generally supportive of results from previous studies, the use of new data reinforces these earlier findings. The paper provides a survey of some of the more recent studies. It uses a modification of Oaxaca's model suggested by Cotton (1988) and Neumark (1988) to estimate results. Empirical findings are reported thereafter.

The remainder of the paper is organized as follows. In the following section, a survey of the literature is provided. Next, the methodology and data used in the study are discussed. The empirical results are presented and discussed. The paper closes with some concluding comments.

LITERATURE REVIEW

Hamdani (1977) used data from the *1975 Socio-Economic Survey of Rawalpindi* carried out by the *Pakistan Institute of Development Economics*. The same data was used by Haque (1977) and Guisinger *et. al.* (1984) in calculating rates of returns to education. A fourth study by Khan and Irfan (1985) used the *Population, Labor Force and Migration (PLM) Survey*. The Survey was a joint project of the Pakistan Institute of Development Economics and ILO-UNFPA. Another study from this time period was Pasha and Wasti (1995).

Comparison between the results of these studies is difficult. Khan and Irfan's results show the percentage gains from each educational level relative to a common base (which is "Less than primary level of education."). However, Hamdani, Haque, Guisinger *et. al.,* and Pasha and Wasti report incremental returns to each educational level, so that returns relative to a base level would have to be calculated separately. Guisinger *et. al.* (like Hamdani and Haque) based their study on data from the *1975 Socioeconomic Survey of Rawalpindi*. They reported the surprising finding that the returns to education were low. They also found, contrary to their expectations, that instead of falling, the rate of return to schooling rose with higher educational levels. They partly attributed their results to the differences in their methodology compared to Hamdani, who had found higher returns to education.

Among the more recent studies, Nasir and Nazli (2000) used data from the *Pakistan Integrated Household Survey, 1995-96,* which covered 12,622 households, and more than 84,000 individuals. They examined the effect of education, technical training, and school quality on the earnings of wage earners and salaried individuals. Their study differed from previous ones in that they were able to estimate the increase in earnings resulting from an additional year of education at different educational levels. An important finding was that each year of education raises salary by approximately 7%.

Nazli (2004) used data from the *Pakistan Socio-Economic Survey (PSES) 1998-99*. The survey used a two-stage stratified random sampling design to select a sample of 3,564 households. She examined the effect of education, experience and occupation on individual earnings for wage earners and salaried individuals. She found that the education-experience interaction had a positive and significant impact on earnings. When she stratified the earnings functions according to experience groups, she found the returns to education declined as experience increased.

In an excellent, article, Aslam (2007) used four statistical methods to estimate rates of return to males and females. She found that the estimated return to additional years of education ranged between 7-11% for men, and between 13-18% for women. She also found the education-earnings profile to be sharply convex for both males and females, and provided explanations for this pattern. Aslam's data were from the *Pakistan Integrated Household Survey, 2002.*

Hyder (2007) defined seven levels of education, and computed the rate of return to each, relative to the preceding level. The gains ranged from 1.5% for primary education to 9.23% for professional education. Much of her paper dealt with differences between the public and private sector. Her data were from the *Labor Force Survey, 2001-02.*

Abbas and Foreman-Peck (2007) used data from the *Pakistan Social and Living Standards Measurement Survey 2004-05*. Consistent with other studies, they found the rates of return to be consistently higher for females than for males. Among paid employed workers, they found the returns for males to range from 5.7% for primary education to 63.5% for higher secondary education. Returns for females were higher, ranging from -7.3% at the primary education level to 142% for tertiary level. In both cases, the reference group was workers with less than five years of schooling.

METHODOLOGY AND DATA

The data used for this study were drawn from the *2001-02 Pakistan Integrated Household Survey (PIHS),* and were collected by the Government of Pakistan's Federal Bureau of Statistics. The *PIHS* is a large sample survey covering 16,182 households. The occupation variables were determined using the

Pakistan Standard Classification of Occupations (PSCO), 1994 as revised by the *International Standard Classification of Occupations (ISCO),* 1988.

The wage equation used for the estimates in this study is:

$$\text{Log Monthly Salary} = \alpha + \sum_{i=1} \beta X_i + \sum_{i=1} \delta_i OC_i + \sum_{i=1} \mu_i IC_i \quad \text{equation} \qquad (1)$$

where the X_i represent eleven characteristics of working individuals that impact earnings, OC_i are eight occupational categories, and IC_i represent nine industrial categories. In addition to AGE (which was a proxy for experience), and AGE-SQUARED (which captures the concavity of the age-earnings profile), we included the following variables: Marital status represented by a dummy variable. This variable was included to test the hypothesis that a correlation exists between marital status and earnings, as is suggested in the literature.

English instruction was a dummy variable applied to survey respondents who received their education in English. We are not aware of a previous study using Pakistani data that has included this variable in an earnings equation. The rationale for its use was straightforward. Schools where the medium of instruction is English are generally viewed as elitist, and cater to the more affluent segments of the society. The quality of instruction is regarded as superior to those schools with mediums of instruction in other languages.

URDU instruction. This dummy variable applied to survey respondents who received their education in Urdu. A number of schools in Pakistan impart instruction in a regional language. Our hypothesis is that while schools where students are taught in Urdu are superior to those in the regional languages, they are generally not as good as those with English as the medium of instruction.

We used five dummy variables for different levels of education: Middle, Matric, Intermediate, BA/BSc., and Masters or other advanced degree. The missing base variable was education below Middle level. The *a priori* expectation was that earnings would rise monotonically as the level of education rises.

Dummy variables were used for eight different occupational categories: legislators, senior officials, and managers; professionals; technicians and associate professionals; clerks; service workers, shop and market sales workers; skilled agricultural and fishery workers; and plant and machine operators and assemblers. The missing base variable for the occupational categories was *Elementary Occupations.*

Nine industrial classifications were also recognized, and dummy variables were used in the regressions to identify each of them. These industries were mining and quarrying; manufacturing; electricity, gas and water; construction; trade hotels and restaurants; transport and storage; finance and real estate; community services; other activities not defined. The missing base variable for industrial classifications was *Agriculture, Forestry, Hunting and Fishing.*

It is very likely the case that working women in a less-developed country like Pakistan do not constitute a random sample of all females in the population. This is the well-known selectivity-bias problem expressed by Heckman (1979), following whom variables to correct for samples selectivity bias were developed, and used as an additional explanatory variable in the wage equations. These variables, or 'Inverse-Mills ratios' have been seldom employed in computations of the gender earnings gap, but have been widely used in the literature on union-nonunion wage differentials. They are $[f(EMP_i/F(EMP_i]$ and $[-f(EMP_i/\{1-F(EMP_i]\}$ where F and f are the cumulative and density functions of a standard normal variable. EMP_i is the predicted employment status of an individual, obtained from probit estimates of the reduced-form equation determining employment status. Given the likelihood of different factors not influencing the work decision of males and females in the same manner, the selectivity variables were computed from separate probits for each sex. Compactly stated then, joint determination of participation and earnings is given by:

$$\ln W_{mi} = \beta_{m0} + \beta_{m1}X_{mi} + \beta_{m2}[-f(EMP_i/F(EMP_i] + u_{mi} \quad (2)$$
$$Emp_{mi} = Z'\delta_{mi} + \varepsilon_{mi} \quad (3)$$

for males, and:

$$\ln W_{mi} = \beta_{m0} + \beta_{m1}X_{mi} + \beta_{m2}[-f(EMP_i/F(EMP_i] + u_{mi} \quad (4)$$
$$Emp_{mi} = Z'\delta_{mi} + \varepsilon_{mi} \quad (5)$$

for females. X_{mi} and X_{fi} represent characteristics of males and females respectively, as represented in equation (1), and Z is a subset of X, and represents those worker characteristics that are instrumental in determining whether an individual will be in the workforce. In equations (2) and (4), the selectivity variables proxy for the probability of male and female participation in the workforce. The use of these variables leads to consistent estimation of the coefficients of the equation.

EMPIRICAL RESULTS

Only individuals between the ages of 16 and 65 were used in this study. The mean age of 37 indicates that the sample is relatively young. Eighty percent of the survey respondents were married. The sample is heavily biased toward men, with 96% being male. We identified English, Urdu, and Regional Languages as the mediums in which instruction is imparted in Pakistan. Only 3% of the respondents attended English-medium institutions, 50% went to Urdu-Medium institutions, and the remaining 47% received their education in regional languages. Forty-eight percent had a level of education below Middle. The percentage of those with higher levels of education was Middle (12%), Matric (17%), Intermediate (8%), Bachelors (7%), and Masters or other advanced degree (4%). Table 1 lists the coefficient estimates from three different regressions: the first for the entire sample, and the other two for males and for females separately.

AGE was used as a proxy for experience. The data did not contain a more precise variable to capture the effect of work experience As expected, we found AGE to be positively correlated to earnings. However, both the size of the coefficient estimate as well as the statistical significance of the variable was considerably higher for men than they were for women. The negative coefficient for AGE-SQUARED confirmed the concavity of the age-earnings profile, although it was statistically insignificant for females. The coefficient estimates indicate that earnings rises by 2.3% for every year that a male advances in age. The percentage increase for women, was lower, at 1.2%.

It has been suggested in the literature that married individuals tend to have higher earnings than those unmarried. The suggestion is made that higher-earning men tend to self-select into the marriage market. It is further postulated that as a result of social conditioning, women often seek out jobs that are traditionally lower paid than those pursued by their male counterparts. Our finding of a positive and statistically significant coefficient for MALE reinforces the findings of other researchers. Our coefficient estimates indicate that married men earn approximately 8% more than their unmarried counterparts, while the gain for married women is 6%.

Our earnings equation used a variable that we have not seen hitherto, in previous studies computing rates of return to education. It is well known that the most elite academic institutions with the highest quality of instruction in Pakistan are generally those which impart education in English. Many institutions also impart education in the national language, Urdu. Though the quality of instruction is not considered at par with English-medium institutions, it is nonetheless superior to that at institutions which teach using regional languages. We therefore used a dummy variable for respondents who had had their education at English medium institutions as well as a dummy variable for those who were taught in Urdu. The missing base variable in the regression equation consisted of the regional languages.

As we expected, the coefficient estimate for instruction in the English language was positive and highly significant for both males and females. The coefficient estimate suggests that individuals from English-medium institutions earn approximately 35% more than those from institutions using regional languages. The impact was very similar for both males and females. The coefficient estimates for URDU was also positive and statistically significant, but less so than for ENGLISH. The coefficient estimates translate to percentage earnings gains of 13% and 9% for males and females respectively, relative to those schooled in the regional languages.

Table 1: Coefficient Estimates for Entire Sample, PIHS, 2001-2002

Coefficient	Entire Sample		Males		Females	
Intercept	7.11	(152.88)	7.26	(166.29)	7.34	(39.64)
Age	2.29	(10.24)	2.31	(10.04)	1.22	(1.19)
Age-Squared	1.76	(-6.52)	1.79	(-6.45)	0.58	(-.43)
Married	0.08	(6.74)	0.08	(6.57)	0.06	(1.70)
Male	0.15	(7.86)				
English Language Instruction	0.33	(13.60)	0.33	(12.79)	0.32	(4.47)
Urdu Language instruction	0.12	(11.97)	0.12	(11.88)	0.09	(1.83)
Middle Education	0.05	(3.69)	0.05	(3.82)	0.13	(-1.33)
Matric Education	0.14	(10.95)	0.14	(10.69)	0.13	(1.95)
Intermediate Education	0.26	(15.15)	0.27	(15.29)	0.25	(1.28)
BA/BS Education	0.41	(22.46)	0.42	(21.64)	0.33	(4.86)
Masters and Other Advanced Degrees	0.59	(25.30)	0.58	(23.32)	0.60	(8.14)
Legislators, Senior Officials and Managers	0.53	(20.83)	0.52	(20.12)	0.89	(6.79)
Professionals	0.23	(11.26)	0.24	(10.77)	0.17	(2.40)
Technicians and Associate Professionals	0.19	(9.95)	0.20	(9.70)	0.12	(1.65)
Clerks	0.05	(2.55)	0.05	(2.35)	0.19	(1.58)
Service Workers, Shop & Market Sales Workers	0.16	(11.54)	0.16	(11.30)	0.12	(1.60)
Skilled Agricultural and Fishery Workers	0.23	(11.55)	0.23	(11.17)	0.30	(3.47)
Craft and Related Trades Workers	0.14	(9.04)	0.14	(8.91)	0.12	(1.45)
Plant and Machine Operators and Assemblers	0.12	(7.19)	0.13	(7.23)	0.08	(-.42)
Industry: Other Activities Not Defined	0.14	(-2.39)	0.15	(-2.42)	0.17	(.47)
Industry: Mining and Quarrying	0.08	(1.57)	0.09	(1.64)	0.03	(-.12)
Industry: Manufacturing	0.05	(2.21)	0.05	(2.22)	0.03	(-.26)
Industry: Electricity Gas and Water	0.03	(1.01)	0.03	(.91)		
Industry: Construction	0.02	(-1.06)	0.02	(-1.07)	0.02	(.08)
Industry: Trade, Hotels and Restaurants	0.13	(6.16)	0.13	(5.99)	0.02	(-.14)
Industry: Transport and Storage	0.09	(3.74)	0.08	(3.52)	0.66	(2.45)
Industry: Finance and Real Estate	0.33	(9.42)	0.33	(9.29)	0.04	(.17)
Industry: Community Services	0.10	(-5.11)	0.11	(-5.19)	0.03	(.31)
Selectivity Variable			0.52	(5.11)	- 0.19	(-0.62)
Note: Figures in parentheses are t-statistics						

Table 1 lists the coefficient estimates for the equation Log Monthly Salary = $\alpha + \Sigma\beta X_i + \Sigma\delta_i OC_i + \Sigma\mu_i IC_i$ The first column iss based on results from the entire sample, the second for the male sample, and the third column reports results for females. Figures in parentheses are t-statistics.

A number of interpretations could be suggested for these findings. *Prima facie,* the inference to draw would be that instruction in English is superior to that in Urdu, while the latter trumps the regional languages. However, as is clear to any Pakistani observer, the level of resources devoted to education (financial, manpower, and capital) is highest in the case of English-medium institutions, followed by Urdu-medium institutions, and finally, the schools that impart education in the regional languages.

English continues to be the language of the powerful elite, who ensure the provision of ample resources to the institutions where their offspring are nurtured. With higher compensation levels, the English-medium schools get first pick of incoming teachers. Buildings including laboratories are acceptable, sometimes even by Western standards at the best of the English-medium institutions, but are often non-existent in the regional language schools. The resultant difference in the quality of education imparted, and the outcome of significant differentials in earnings, is a reflection of the biases and power plays inherent in our society. The data, without getting into a social commentary, clearly uphold the benefits of receiving education in the English language. For those not as privileged, the Urdu language is to be preferred to the regional languages.

It must be stressed that it is very likely not the medium of instruction itself, but the attendant resources that generally accompany English medium instruction, and to a lesser degree, Urdu medium instruction (relative to the regional languages) --- that are likely the reason for the earnings premiums reported in this article.

Nine different occupations were identified in the data. Our regressions included eight of these, with Elementary Occupations as the missing base variable. The coefficient estimates associated with each of these occupations (listed in Table 3) indicate the earnings premium relative to respondents employed in the elementary occupations ranged from 5 percent to 70 percent. Given the broad definitions of the occupational categories, it is difficult to provide much meaning to these estimates.

Ten industrial categories were identified in the data. Nine of them were included in the regressions, with Agriculture, Forestry, Hunting and Fishing being the missing base variable. As with the occupational categories, the industrial categories were very broadly defined. The only industry with a considerable premium relative to the omitted base was Finance and Real Estate, where the earnings premium was 39% above those from the omitted base industry. Our coefficient estimate suggests that males earn 15% more than females. The gender earnings gap is well documented, and we will therefore refer the interested reader to these other studies. They include Ashraf and Ashraf (1993).

The principal objective of this study was to determine the rates of return to different levels of education in Pakistan. Five levels of education were identified in the earnings equation: Middle (eight years of schooling), Matric (ten years of schooling), Intermediate (twelve years of schooling), Bachelors (fourteen years of schooling), and Masters and Other Advanced (sixteen or more years of schooling). Less than Middle level of education was the missing base variable in the regression equation. Consistent with *a priori* expectations, coefficient estimates rose monotonically with the level of education. The percentage gain to men and women from different levels of education (relative to the base of "less than middle level of education") is shown below in Table 2. These results show the considerable enhancement in earnings from receiving progressively higher levels of education. The differences across gender are relatively minor, underlining the benefits that accrue to both men and women with formal academic instruction. As a clear recommended policy measure, it reinforces the need to provide education as a means to combat poverty in the country. Even the attainment of Middle level of education would, in the case of females, enhance earnings by 13%. Given distressing levels of economic well-being, such an enhancement of income would be welcome.

Table 3 lays out the returns to education across the four provinces. It appears that education at all levels leads to higher returns in the NWFP than it does in the other provinces. It is noteworthy that even a middle level of education leads to a considerable increase in earnings (except in Sindh, where the coefficient estimate was statistically insignificant). As a policy prescription, it suggests the need for allocating resources to lower levels of education. As we observed earlier, the results are even stronger in the case of females.

Table 2: Percentage Earnings Gains from Different Levels of Education

	All	Male	Female
Middle	5%	5%	13%
Matric	15%	15%	14%
Intermediate	30%	31%	28%
Bachelors	51%	52%	39%
Master/Advanced	80%	79%	82%

Table 2 reports percentage earnings gains from different levels of education. The first column is based on results from the entire sample, the second is for males only, and the third reports results for females. The percentage earnings gains were computed as the exponent of the coefficient estimates of the dummy variables for each of the different levels of education computed from the equation: Log Monthly Salary = $\alpha + \Sigma\beta X_i + \Sigma\delta_i OC_i + \Sigma\mu_i IC_i$

Table 3: Rates of Return to Education by Province

Education Level	Punjab	Sindh	NWFP	Baluchistan
Middle	0.068 (3.20)	-0.002 (0.007)	0.137 (3.91)	0.109 (2.505)
Matric	0.171 (8.48)	0.079 (3.38)	0.238 (6.93)	0.192 (4.83)
Intermediate	0.325 (11.41)	0.226 (7.77)	0.259 (5.65)	0.218 (4.48)
BA/BS	0.553 (16.84)	0.330 (10.75)	0.427 (8.31)	0.304 (5.56)
Masters/Advanced Degree	0.707 (17.69)	0.418 (10.06)	0.726 (12.13)	0.494 (7.74)
R-Squared	0.34	0.37	0.35	0.26
No. of Observations	5,182	3,796	1,976	2,355

Table 3 is an extension of Table 2. It reports percentage earnings gains from different levels of education. The first column is based on results from the entire sample, the second is for males only, and the third reports results for females. The percentage earnings gains were computed as the exponent of the coefficient estimates of the dummy variables for each of the different levels of education computed from the equation: Log Monthly Salary = $\alpha + \Sigma\beta X_i + \Sigma\delta_i OC_i + \Sigma\mu_i IC_i$

CONCLUSIONS

This paper updated earlier estimations of the returns to education in Pakistan. New data from the Pakistan Integrated Household Survey, 2001-2002 were used for this purpose. We used a modified version of the well-known Oaxaca model suggested by Cotton and Neumark for our estimations.

One of our most important findings was that returns for females at 13% is considerably higher than for males (5%) at the Middle level of education. This suggests that policy makers should devote more resources toward female education, in a country where large numbers of women go without any formal education. These results are consistent with the findings of earlier researchers, and serves to reinforce those results.

Because of the relatively small number of observations for females in the sample, results have to be viewed with caution. Also, precise data on work-experience is difficult to get, since females in Pakistan start their education at different ages. It is hoped that as better data becomes available, estimations of the returns from education will be more reliable. We expect that future research will explore other determinants earnings that were not available in the data set used for this article. With all of the limitations of the data, we nonetheless feel that the basic conclusions are valid, and can serve as a basis for further exploration of this important issue.

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