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## BUSINESS REVIEW

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## EDITORIAL PERSPECTIVE

When the group or civilization declines, it is through no mystic limitation of a corporate life but through the failure of its political or intellectual leaders to meet the challenge of change.

- *Will and Ariel Durante*

No one can claim to understand the corporate culture better than the man who has sought the image of the corporate world-view with its prejudices and naiveté, inclinations and passions, in order to learn and then to understand what we have to fear or to hope from its progress and its fatal flaws. Corporate culture shares and celebrates the weaknesses and strengths of the bureaucratic compulsions and the stifling orientation of the technocratic parlance. Corporate Man need not belong to the unholy company into which it has been drawn because of his pathological fear of *change* and his failure to respond to its challenges creatively in the manner described by Ibn Khaladun and A.J. Toynbee. Instead, he has found a way of escape from the imperious presence of change by living in denial, glorifying the artificial reality created by his uncritical and unquestioning subservience to the *status quo*.

Thus, under the force of circumstance, corporate culture has assumed quite as much as any other system of management. However, in the field of education the triangular configuration – corporate, bureaucratic and technocracy – have a way of turning out to be hardy perennials. They have become the irritants, if not the thorns, in the heart of liberal education and creative imagination. Year after year, in seminars and conferences, held by educational institutions and business organizations, solitary and deep voices have gently sounded warnings against the galloping specialization and the present-day departmentalization of knowledge. It is not that there is something intrinsically wrong with such orientation, if we do not forget that analytical attitude can be dangerously discursive. Likewise, our present day departmentalization of knowledge can be of immense importance if we remember to put back together what we have taken apart. Clarence B. Randall, in his *The Folklore of Management*, has reminded us of various managerial myths that need to be scoffed at. The myth of the specialist is one that specially needs debunking in the interest of a philosophy of corporate *world-view*. It has always been the task of philosophy to place matters in their true perspective but there is clearly a danger that such theses may be rashly applied to lend urgency to the warning sounded by Randall.

Randall has stated that: “Unless the danger is seen in time, galloping specialization can bring any company to the brink of chaos. The remedy? Top managers with the breadth of vision only a liberal education can provide”. These managers, we are inclined to assume, ought to be the *well rounded men* and an embodiment of what Covey calls the “character ethics”. They should not assume, as they mistakenly do, that in abiding by the ethical principles and in glorifying their self ennobling hedonism, These men are trying to set up ethics against economics. They are not. It is just that they do not see why ethical conservatism should be antithetical to economic conservatism.

He is a wise manager indeed who has lived through the rough-and-tumble days of the vicissitudes of corporate culture, a man who has grown wiser to realize that the challenge of change demands new ideas and creative response to keep a culture, including corporate culture, or a *world-concept* from rigidifying into a petrifying dichotomy between *thus it is* and *thus it ought to be*. What the corporate culture and the corporate world needs most is the *Man in the Gray Flannel Suit* – a well rounded man, a total man, with strong ethical and moral convictions, creative vision and the will to truth. He is the ideal corporate manager who is not shy about making bold pleas for the liberal education of the corporate executive. He is the man who can endure the burden of character and engage in the moral reconstruction of the corporate world-view. He is the man who believes that the corporate management must have a human face and, therefore, in his own way, he is seeking a critical and creative understanding of the place of *decision* and *value* in corporate management and the place of *honesty* and *truth* in business. Randall untringly warns the business executive against upholding expediency over truth, or elevating the interest of the business over his personal ethical and moral integrity.

That there is need to reinterpret the ethico-moral dimension of the corporate experience cannot be over stressed, especially in view of the fact that interpretations do tend to be organized round certain large polarities: Moral *versus* Immoral. At the same time, there is also growing realization that “the dialectical tendency of mind, the habit of seeing life as a collision of radically opposed forces and values has been accentuated by special conditions of experience” in the corporate culture. But what is not stated clearly and investigated methodologically are the “special conditions of experience” which have nurtured the “radically opposed forces and values” in the corporate culture.

*Corporate* management is rotten to the core and that is only one very unflattering observation. The accusations about the corporate culture are many and it beggars belief that a corporate thinker, or a management executive, has never felt the need to convince us that not all accusation reflect the sickness in his heart and that some of the indictments are not based on truth. But truth loving people cannot astray from the truth for very long. Disputes and differences of orientation can indeed result

in a collision of motivations and values which are not based on truth. In life, and in management, nothing is settled unless it is settled right and nothing is settled right unless it is predicated on truth.

Warning against the misleading projections about the company's financial health, Paul Galvin, founder of Motorola says: "Tell them the truth, first because it is the right thing to do and second because they will find out anyway". In contrast to such principle oriented view of Galvin, Johnson F. Ross, CEO of R.J.R. Nabisco offers quite an antithetical view of corporate management. "Never play by the rules, never pay in cash and never tell the truth". Ultimately, it is a matter of choice and, as in the realm of value judgment, in matters of choice, not to choose is also a choice; just as in a given situation, characterized by decision making, not to decide is itself a decision.

Tomorrow is already on us and very soon today will never be the same again. We "cannot step in the same river twice", said the Greek philosopher Heraclitus. Let us not resist change; and let us not sit back and hope in vain. Let the brilliant sun set and let it shine from wherever it chooses to rise. Let us move on to the *eternal beyond*, let us look forward to the infinite *yet to be*.

Let us seek the happiness of transformative change. Let us not, in resignation, acquiesce to the "given" world, *the world as it is*. Let us, in our creative rage, change the give world into *the world as it ought to be*. Let us give the faceless world the human face. Let us give the heartless world a feeling heart. Let us strive to seek the joy and the thrill of the early morning breeze of the world-to-be.

When such dictums of enabling character are drawn into the pedagogy of business education, together they will result in the hope that the reconstruction of the corporate world-view will lead us to our joyous acceptance of corporate social responsibility for our '*portion of the world*'. Such an attitude of care and concern for the worldliness of our world will also produce in ourselves deeper sentiments and instincts resulting in the cultivation of a much desired business *ethos*, liberating corporate man from his obsessive-compulsive neurosis.

The corporate consultants and CEOs do not build the bridges between ethics and economics; rather they happily engage in the INSIDE JOB. For their trickery, these dream merchants get fabulously paid for shattering the hopes of the stake holders. The genius of these mandarins for good and evil is simply incredible.

Just like the Freidman and Freeman debate, concerning the Contest of Profit Motive and Social Responsibility, disagreements regarding the place of honesty and veracity in business occur between those who believe that corruption and deception are built into the business system. Prof. Miller, for instance, seems to imply that in

the corporate world only “the law of jungle prevails”. On the contrary, Clarence Randall believes that inspite of the fatal flaws characterizing the corporate system, business leaders “can and must set a moral and spiritual reawakening”, that the corporate leaders can contribute immensely to the social welfare of man. The thought is not a thing of recent vintage or provenance; it was, since a long time, in the making. The expectation, built into the observation, is not new either. The need to draw ethics into the fold of economics and to bring moral discourse into the domain of corporate management was felt and articulated way back by the ablest men of noblest moral character. For example, Frank Abrams, former Chairman of the Standard Oil Company of New Jersey, believed that “business management is a profession” and the “hall mark of profession” is its “strong sense of responsibility to the community” (*Harvard Business Review XXIX 1951*). R.J. Cordiner, President of Electric Company, emphasized that generalized knowledge (provided by liberal education) along with direct service to the community are indicators of professionalism. (Ibid pg 45)

Addresssing George Washington University, the managing director of the IMF, Dominique Strauss-Kahn, advised policy makers to do a ‘major regulatory surgery’. As opposed to the old pattern of globalization, he said, “the new global governance must also pay more heed to social cohesion, It must have a more human face.”

“Ask yourselves”, said the IMF chief, “what kind of world do you want to live in? Surely one that is more intelligent, more just and more virtuous than the old one” – We may continue to add, of course not the *world as it is* i.e. , the “given” world, a world that cannot be other than what it is and therefore cannot be constructed and reconstructed into *the world as it ought to be*.

The “given” world has grown too old to endure the burden of character to enjoy the excitement of creative change. Indeed, corporate man has been betrayed, time and again, by the events and circumstances of his being-in-the-world. It is not surprising, therefore, that he so passionately desires to live in a world whose worldliness is not surrounded by hideous ignorance, ugly, dehumanizing, crude and crass prejudices, injustice, pride, poverty and lust for power and wealth. It is a world which destroys man’s humanity, personal integrity and self-respect, a world which adds no meaning, purpose and value to his existence. It is a world in which honesty, truth and virtue are mocked at or, at best, greeted with derisive smile.

It is not quite an ethical or moral scenario of the corporate world; but it is a familiar one. It may not be very much to the liking of a corporate thinker but there is an existential side to it. What adds *pathos* and tragic sense to life is the realization that life is only once in a life-time opportunity and who among us can avoid it? But life is a poor thing indeed, nasty and brutish, ugly and absurd, if we have to live for


something we are not willing to die for or have to die for something we are not willing to live for. When death is the hunter, there is so much at stake in life and a man of conscience who has a mind of his own has no time for regrets.

The creator of Disney World was once asked about the limit of animation. Without a moment's hesitation Mr. Walt Disney replied : *Imagination*.

What would the world be like if we really could not possibly *imagine* the way it *ought* to be and if we really did not care to use our creative imagination as a revelation of the *world-to-be*. It is a frightening thought to live in a world whose worldliness permits no other description except "*thus it is and it cannot be otherwise*." The understanding of our being-in-the-world, is bound to change our understanding of the meaning of the world. Phenomenological understanding of the world symbolized by the hyphenated relationship of man inserted into the world, differentiated and pronounced by the preposition *in* makes the world a *lived-world*, the world different from the vacuous "world-concept". Such a world, "the world" does not exist; only the worlds exist; yours and mine, his or hers, idealistic or materialistic, corporate or bureaucratic, the world of a rich man and the world surrounded by hunger and abject poverty. Moreover, we do not live in *different* worlds; we all live in the same world *differently*. Our aim, while we happen to be in the world ought to be to form and reform, to construct and reconstruct the world on such a basis that the world as it is will allow man to imagine the world as it *ought to be*. In the Quranic parlance, man is not only responsible for "his portion of the world"; he is also responsible for creating the kind of world he would want to live in. Man's being-in-the-world is a trial by existence. When he resigns himself to the world as it is, time offers no salvation, future represents a line already drawn, rather than a line in the drawing, transcendence disappears from his world and *hope* dies. In such a world, man creates no new values or ideals. He makes no effort to preserve the past for the future. Such a world unfolds no new horizons and, in such a world, man lives without a unified or unifying perspective on the transcendental and creative meaning of his relationship to his being-in-the-world. The preposition *in* does not give a human description to his condition. It does not allow him to imagine that his being in the world is in the manner of becoming. His situation does not exalt his creative will, nor does it allow him to move on to the broader questions of ethico-moral significance. His predicament strangulates his *freedom* into petrifying *necessity*. It destroys his creative will and the will to power which is the will to truth.

Let us sum it up by reiterating that the generalized knowledge acquired through and provided by liberal education is the desideratum of the present day business culture. Wallace B. Donham who became Dean of the Harvard Graduate School, was among the earliest corporate thinker and a highly articulate crusader for higher ethical and moral standards in the schools of Business Education.



As early as 1922, in the first article of the first issue of *Harvard Business Review*, Donham expressed his wise appreciation of the important professional and pedagogical aspects of business education. He recognized that pious platitudes were no substitute in professional codes of ethics for concrete and specific rules. He even emphasized the need to create a language that can be used to express *professionalism* and specialization effectively as a means of communication of the values of corporate culture within the domains of moral and ethical discourse. His ideological concept of professionalism is a typical expression of the need for ethical and moral orientation of business education and its role in the service to the community. According to him: “*The development, strengthening, and multiplication of socially minded business man is the central problem of business. Moreover, it is one of the great problems of civilization, for such men can do more than any other type to rehabilitate the ethical and social forces of the community.*” 

**Tufail A. Qureshi**

All that man has is life. What he makes of it, or what it makes of him, is all that counts. Society and culture have emerged in part to facilitate our animal desires, but they can also be a mask for deception. Man has knowledge. Through knowledge he may discover what he is, what he needs, what he desires, and what he can have. But knowledge is the instrument of desire, and desire of life; yet life ultimately ends in death. Life while lived can be good and bountiful: love, devotion, kindness, knowledge, achievement, success, well possible within limits. But all good things must pass, and life has its bitter end. Some may develop feelings of resignation toward these brute facts. Some may panic or lose nerve. In any case, the facts should be allowed to speak for themselves.

Paul Kurtz – *Decision and the Condition of Man*, page 288

**ARTICLE****International Financial Reporting Standards:  
A Cautionary Note for Emerging Economies<sup>1</sup>**

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**ABSTRACT**

*Long before the present economic crisis unfolded, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) had been working to achieve harmonization in accounting and financial reporting standards across the globe. Now that the world economic community has become more integrated, cross border flow of capital has gained unprecedented momentum and steps are underway to achieve this goal as early as possible. Initial efforts to harmonize local accounting principles and practices with those followed in developed economies were generally aimed at facilitating foreign multinationals operating in other countries. The desired goal of harmonization now ought to be formulation of accounting standards that would facilitate optimal resource allocation for economic growth and prosperity and proper training of accountants with an informed professional outlook. Harmonization of accounting practices and procedures in emerging economies, therefore, should not be viewed as simply a process of complying with externally imposed standards. Rather, the process should involve exchange of ideas among all the participants.*

*For such exchange of ideas to be meaningful, a critical examination of the factors that contributed to standards of reporting financial information is necessary. Discourse on such a vast topic requires an extensive work, which is beyond the scope of this paper. However, since United States of America has been at the forefront of codifying accounting principles, this paper is selectively focused on some contentious financial reporting issues and controversies that have impeded the development of a cohesive theory governing accounting standards for measurement and reporting of enterprise performance.*

**INTRODUCTION AND BACKGROUND**

The role of accounting in bringing on the ongoing economic crisis is a widely debated topic. Some hold accounting standards requiring fair value

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<sup>1</sup>An earlier version of this paper was presented in AIMS7 Conference held in Bangalore, December 20--22, 2009.

See Horngren (1973), May and Sundem (1976) for example of this point of view.

See Blough, 1955; Moonitz, 1957; Hill, 1957; Li, 1961; Drinkwater & Edwards, 1965; Chambers, 1968; Hawkins, 1968; Barton, 1970;

Nair & Weygandt, 1981; and Vulkan & Rue, 1985 for these early criticisms.

accounting responsible for unduly distorting the health of companies' balance sheets and contributing to a negatively reinforcing downward spiral. Others argue that accountants are often scapegoats for investors' excesses as was the case in the United States in 1929 crash when accountants were accused of putting water on the balance sheet in the 1920s. Compelling arguments may be found on both sides. It is hard to pinpoint the blame for such a monumental crisis on any specific factor, nonetheless the fact remains that accounting standards of reporting financial performance play a vital role in guiding important economic decisions at the firm level.

Long before the present economic crisis unfolded, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) had been working to achieve harmonization in accounting and financial reporting standards across the globe. Now that the world economic community has become more integrated, cross border flow of capital has gained unprecedented momentum and steps are underway to achieve this goal as early as possible. In November 2008, The Securities and Exchange Commission in US issued a proposed road map that would require U.S. public companies to convert to international financial reporting standards. (IFRS). IFRS could be mandatory as early as 2014 if certain milestones were to be met by 2011. The milestones include continued improvement of IFRS, revamping of the funding mechanism for International Accounting Standards Board (IASB) operations, and significant progress in the training of accountants and stakeholders on the IASB standards (Marden and Brackney 2009, 32)

Initially harmonization of local accounting principles and practices with those followed in developed economies was generally aimed at facilitating foreign multinationals operating in other countries. The desired goal of harmonization now ought to be formulation of accounting standards that would facilitate optimal resource allocation for economic growth and prosperity and proper training of accountants with an informed professional outlook. Harmonization of accounting practices and procedures in emerging economies, therefore, should not be viewed as simply a process of complying with externally imposed standards. Rather, the process of harmonization should involve exchange of ideas among all the participants.

For such exchange of ideas to be meaningful, a critical examination of the factors that contributed to standards of reporting financial information is necessary. Discourse on such a vast topic requires extensive work, which is beyond the scope of this paper. However, since United States of America has been at the forefront of codifying accounting principles, this paper is selectively focused on some contentious financial reporting issues and controversies that have impeded the development of a cohesive theory governing accounting standards for measurement and reporting of enterprise performance. A brief historical account of the drifting

course of establishing accounting standards for financial reporting is presented in the following section.

### **THE INCONCLUSIVE QUEST FOR A CONCEPTUAL FRAMEWORK**

Measurement and reporting of enterprise income and financial position has been the focal point of accounting standards ever since attempts to improve and organize the discipline of accounting began in the aftermath of the Great Depression in the US. Historically, concepts of business income have evolved around two fundamental, but often competing, considerations: operational facility and usefulness. Operational facility refers not only to the practical ease in the process of measuring income but also to the logic, internal consistency, and objectivity of the method of measurement. Such basic accounting principles as realization, matching, and cost basis are examples of rules and conventions that accountants have devised exclusively to ensure operational facility and which have no real-world counterparts or any significance outside of their role in the logic of accounting literature (Hendrickson 1982, 138-139).

On the other hand, the notion of usefulness is inherent in the very idea of calculating a measure to summarize the results of operations of an enterprise. Ideally, therefore, operational facility and usefulness should not be competing goals. However, the factors that governed development of accounting techniques and procedures [realization, matching, and cost basis] and the economic factors that brought about development of securities markets resulting in widespread participation by the general public in financial activity have not always defined usefulness of accounting data in the same terms. Accordingly the quest for usefulness in reported income has for the most part been pursued along two different lines of development.

The first line of development concerns the achievement of uniformity in disclosures and a sound basis for comparability in the reported income by narrowing the areas of wide divergence in financial reporting. The first three hundred years between publications of Pacioli's *Summa* and the accounting practices of the nineteenth century were devoted to the refinement and diffusion of the double entry book keeping method. Up until the seventeenth century income was the byproduct of the closing process primarily due to the nature of venture trading. At the termination of each venture, profit or loss was determined by subtracting the investment from the proceeds of venture assets (Chatfield 1977, 52 & 256-259).

Lack of a theoretical underpinning in defining income led to the adoption of a wide variety of alternate accounting practices for essentially the same types of situations by different business firms in accordance with their own preference. During the 1920's, when the general public in the United States of America first

began buying corporate securities, auditors faced the problem of certifying financial data for distribution to general public (Chatfield 1977, 129). By this time the proliferation of accounting alternatives had reached to such alarming proportions that it became a major target of criticism in the printed media. Government intervention in the form of Securities and Exchange Acts of 1933 and 1934 and the work undertaken by the professional accounting bodies was, therefore, primarily directed towards elimination of undesirable accounting practices and codification of acceptable alternatives (Belkaoui 1981, 22-23).

The second line of development deals with the theoretical basis of the income concept that can be interpreted in terms of real-world experience and not in terms of adherence to institutional rules and guidelines. But this theoretical pursuit for a concept of income did not take hold until after World War II and is to this date in the state of transition. The advent of corporations engaged in continuous trading as opposed to venture trading and the need to pay dividends to shareholders at regular intervals necessitated periodic reckoning of the financial position of the enterprise. Consequently the need for distinction between capital and income was clearly recognized and profit was determined by measuring the increase in net assets during a period, either through a process of periodic appraisal of the asset. This approach was based on the proprietary theory, which holds that the firm is owned by some specified person or group, such as a sole proprietor, a partnership, or a number of stock holders.

At this initial stage, operational facility and usefulness remained somewhat compatible goals. However, this focus on determination of income through measurement of changes in assets shifted from the proprietary concept to the entity concept with the adoption of income tax laws and the development of publicly owned corporations in the United States of America. Under this approach, income earned by a business represented the net result of arms length transactions whereby customers paid (or committed to pay to the business amounts in excess of the cost of products sold or services rendered.

A number of causal factors were responsible for the emergence of income statement as the primal financial statement. Langenderfer (1987) identifies the work of Paton and Canning as important and Dailey (1984) asserts that the 1934, widespread ownership of stock, and the separation of ownership and management were important in making the income statement dominant. Hendriksen (1965) also identified separation of ownership and management. The more widespread ownership of joint report of the New York Stock Exchange and American Institute of Accountants resulted in increased income statement focus. Littleton and Zimmerman (1962) treated this quest for financing other than short-term credit as the primary cause of the eventual dominance of the income statement. Brown (1975) and Littleton and Zimmerman (1962) also suggested that the income tax had some

influence on increasing the importance of the income statement, but only Chatfield (1977) promoted the income tax as primary cause of the rise to dominance of the income statement.

To facilitate determination of transaction based income, the principles of realization, uniformity, objectivity, and conservatism were established and the matching concept assumed the position of a central doctrine governing accounting practice. This led to the introduction of earnings realization approach along side the asset/liability approach. Arguments against this mechanical and legalistic approach to determine income were overshadowed by the continuing debate in professional accounting circles on the proper way to apply the realization rule for proper matching of revenues and expenses. As a consequence the revamping of accounting practice by the American Institute of Accountants during the decade of 1930's extensively dealt with matching and realization rules. The criticism, however, did lead to serious efforts on the part of both the individual researcher and the profession to find a theoretical basis for the concept of business income.

### THE INFLUENCE OF ECONOMIC CONCEPTS

Economists have contributed a great deal to the understanding of income concepts. It was Adam Smith who first defined income as the amount which can be consumed without encroaching upon capital, including both fixed and circulating capital (Hendriksen 1982, 143). Hicks (1946) further expounded on this theme in his analysis of the general equilibrium of the economy and developed seven notions of the income concept. The first notion conveyed the central meaning of the concept of income and is frequently quoted as the *Hicksian* definition of income:

“We ought to define a man's income as the maximum value he can consume during a week, and still expect to as well of at the end of the week as he was at the beginning”. (p. 172)

The form in which Hicks stated his central meaning had no operational qualities since it gave no indication of what was meant by “value” or “well off” Clarke (1982, 236-254). Hicks had used this core concept to simply describe elements of the notion of income. He then developed three *ex ante* and three *ex post* approximations of the central meaning to refine the core notion of income. Alexander (1950), a member of the Study Group on Business Income commissioned by the American Institute of Accountants was the first one to interpret the Hicksian definition in a business context and to recommend its adoption by accountants. Solomon (1962) revised Alexander's work and created the impression that Hicks' analysis had stopped at the central meaning of income and in particular at the point of establishing his *ex ante* notion of income.

Such an interpretation of Hicks' work coupled with the worsening inflationary climate in post World War I Europe led to consideration of alternatives to the reporting of income based on historical costs. Edwards and Bell (1961) brought together the economic and accounting views in a comprehensive theory of business income. They presented a contingency view of income where no single concept of income was useful for all possible situations. Even though E&B were not the first to introduce the notion that assets be stated according to current or anticipated replacement or reproduction prices, their work came to be recognized as a benchmark and has since been quoted extensively as a "theoretical authority" on the subject (Clarke 1982, 298).

The Edwards & Bell model was originally formulated as a theory of measurement of income that fundamentally advocated the use of specific prices of the assets as a means of dichotomizing the income into holding gains and current operating profits. Accounting for inflationary effects was not one of the major thrusts in the original argument for replacement cost accounting. However, E&B (1961, 233-269) did address the issue and illustrated how general price level changes could be incorporated into the replace cost accounting system they proposed. As inflationary pressures in the American economy grew and the debate on measurement of accounting income became focused on depicting the impact of inflation on financial statements of an enterprise, the procedures developed by the two authors also found their way into some early professional prescriptions on accounting for prices level changes. In particular, the exposure draft on changing prices issued by FASB (FASB 1978A, par. 26) not only incorporated notions of profit calculations roughly in accord with E&B's computation of current operating profit but also introduced realizable holding gains in the income statement.

Criticism of the E&B model was quite widespread among the professional accounting bodies to oppose inclusion of realizable holding gains in the income statement and to insist on crediting such gains to an account in the capital structure (Clarke 1982, 304). When No. 33 was finally issued in 1979, the provision for including realizable holding gains in the income statement was omitted. The FASB decided that enterprises should report the increase or decrease in current cost amounts separate from the income from continuing operations (FASB 1979, par. 136 and 143). The FASB also did not provide definitive recommendations on important matters such as adjustment for catch-up depreciation, holding gains, and gearing adjustments that were advocated by some proponents of current cost accounting.

Due to the experimental nature of SFAS 33, no attempt was made to replace historical cost accounting which was recognized as a satisfactory, reliable, and useful basis of financial reporting (FASB 1979, par. 107). The statement did include a detailed discussion of the usefulness of the concepts of current costs (par. 116-144) and historical cost/constant dollar accounting (par. 145-155) and it did signal a



limited incorporation of alternative income measurement theories into accounting practice, but its main focus remained on the recognition of the effects of changing prices (par. 92). Furthermore, the normative tone of SFAC No. 1 issued earlier and indications that the later parts of the framework would address important issues related to financial reporting [such as the selection of attributes to be measured, the scale of measurement, concept of capital maintenance etc.] did give the impression of some impending change in the prevailing basis of financial reporting (Walton 1984, 126). But the FASB eventually chose to merely list current practices in SFAC No. 5 and stated without much discussion or explanation that such practices would continue (FASB 1984, par. 91).

The FASB's position with respect to the continuation of current practice for reporting enterprise income, as stated in SFAC No. 1, was based on the argument that accrual accounting provided measures of earnings rather than evaluations of management's performance, estimates of earning power, prediction of earnings, assessment of risk, or confirmations or rejections of predictions or assessments (FASB 1978, par. 48). Under this rationale, supplementary disclosures were required under SFAS. 33 (FASB 1979, par. 108-114) on an experimental basis.

FASB did not find any evidence of the use of this data by majority of the users and acknowledged in No. 89 that No. 33 disclosures did not achieve the cost-benefit relationship that had been anticipated for them (FASB 1986, par. 117). Consequently, after a long period of experimentation, the FASB decided to eliminate supplementary disclosures based on historical cost/constant dollars (FASB 1984A) and simply encouraged current cost disclosures (FASB 1986, par. 1). The rationale of this abandonment of a theoretically justified measure merely on a perceived non-achieved cost-benefit relationship still remains a big question. It is obvious that the FASB changed its view of benefit from theoretical propriety to some monetary measure to be compared with the cost of implementing the standard.

The FASB shifted its attention to other issues that would ostensibly streamline financial reporting under a consistent theoretical framework. Since the very early days, the SEC strongly favored the all-inclusive approach, however, the Committee on Accounting Procedure of the American Institute of Accountants generally favored an approach that included in income of the period only the effects of normal recurring operations. Eventually in 1966, however, the AICPA's Accounting Principles Board (APB), the committee's successor, largely adopted the all-inclusive concept in several opinions that it issued. It took three decades to require income disclosure using the all-inclusive with some exceptions that included foreign currency translations, accounting for futures contracts, employers' accounting for pensions, and accounting for certain investments in debt and equity securities.. It was in 1997 that SFAS 130 eliminated the exceptions to the application of the all inclusive requiring disclosure of net income and other comprehensive income as

components of comprehensive income. The most common items included in other comprehensive income are foreign currency translation adjustment, minimum pension liability adjustments, and unrealized gains or losses on available-for-sale securities. FASB and the IASB have now decided that the financial statement presentation project should not alter existing standards relating to what items are recognized outside of profit or loss. Because of that stance, existing guidance remains unchanged on presentation of other comprehensive income items in a statement of comprehensive income and on the recycling mechanism. An entity should present a stand-alone statement of comprehensive income with other comprehensive income (OCI) items presented in a separate section. Within that OCI section an entity should indicate, parenthetically or otherwise, which category - operating, investing or financing.

Dhaliwal et al. (1999) report that there is no support for the claim that comprehensive income is a better measure of firm performance than net income. In their study they found that with the exception of financial firms, there was no evidence that comprehensive income was more strongly associated with returns/market value or better predicts future cash flows/income than net income. The only component of comprehensive income that improved the association between income and returns was the marketable securities adjustment. The results of their study also raised questions about the appropriateness of items included in SFAS 130 comprehensive income as well as the need for mandating uniform comprehensive income disclosures for all industries.

### **THE EFFECT OF INCOME TAX REGULATION**

Income tax laws also contributed to a widening of the gap between operational facility and usefulness of income. Since the incidence of income tax was to be on income and not on wealth, it was not feasible to assess taxes on the basis of annual balance sheet evaluation. An objective and verifiable method was to be found. Thus, it became necessary to abandon the concept of profit as increase in assets in favor of a transaction-based measure of income. Influence of income tax regulation is evident in the use of the term “net income” as opposed to the term “net profit” used elsewhere in financial reporting and acceptance of LIFO as one of the alternative methods of inventory valuation. Similarly, the use of accelerated depreciation methods became “generally accepted” in accounting practice although such liberalization of tax depreciation rules was primarily designed to stimulate the economy and not to arrive at a more realistic measure of income.

As Chatfield (1977, 209) points out, in all of these cases first the method was permitted under tax regulations then a supporting theory was developed to justify its use in accounting practice. However, since there was no real theory of

income in tax law, it relied on accounting to provide one. But accounting itself lacked an agreed upon theory of income. The net result was a circular process of reasoning and theory development which came under heavy criticism and led to efforts to decouple accounting practice from the influence of tax regulations. Perhaps the most profound and lasting influence of income tax inspired reasoning came about when the Internal Revenue Code was amended towards the end of 1930's to permit income averaging through the device of loss carry-backs and carry-forwards. Furthermore, accounting for income taxes became a significant reporting issue when the Internal Revenue Code in the US permitted companies to depreciate the cost of emergency facilities considered essential to the war effort over a period of 60 months (Rayburn 1986, 89).

These developments resulted in added pressures to find a “proper” treatment of income taxes on the financial statements. The solution was found in treating income tax as an item of expense and to apply the matching concept in its reporting. The first authoritative pronouncement requiring income taxes to be regarded as expense was made in Accounting Research Bulletin [ARB] No. 43 (AICPA 1961) under which recognition of income tax expense was limited to the actual amount paid by the business entity.

ARB No. 44 (AICPA 1961) went a step further in response to increased pressure by business circles for inter-period allocation of taxes as a result of higher income having to be reported because of accelerated depreciation claimed on income tax returns. Under this pronouncement, it became necessary to take into consideration the differences in income tax calculated on the basis of expenses/revenues recognized under tax rules and under the accounting principle of matching, giving rise to a debit or credit balance on the asset or liability side of the balance sheet.

## **INCONSISTENCIES AND CONTROVERSIES**

It is evident from the foregoing that the practice of financial reporting in the US has been a confusing mixture of approaches drawn from myriad perspectives and has therefore has been a topic of severe criticism for several years (de Mesa, 2005). This is because a significant number of practitioners and academics have held the view that in a society that is committed to democratic principles, the right to make rules depends ultimately on the acceptance of the ruled. Thus the term Generally Accepted Accounting Principles, which originally implied acceptance by only the accounting practitioners came to imply acceptance by a wider group claiming adverse consequences. As Moore (2009) points out, accounting standard-setting bodies espouse the usefulness of a consistent conceptual framework, and have derived multiple frameworks in the last century; yet none of them seem to last. One reason behind the failure of the accounting profession to settle on a set of guiding

principle is the desire to make the standards acceptable to all the affected parties.<sup>2</sup> Consequently efforts to formulate accounting standards based on a cogent theory of accounting in the US have not been very successful.

Accounting standards have neither yet come up with an undisputed measure of decision usefulness, nor with a satisfying method to rank competing measurement concepts, such as fair value or historical cost. The calculus of double entry book keeping was originally meant to ensure that transactions have been accurately recorded and the results of past transactions are faithfully presented in the financial statements. If indeed accounting statements were to serve the needs of diverse groups of users, then consideration must have been given to alternative ways of recording and reporting financial data, such as *Triple Entry Bookkeeping* (Ijiri 1986) and disarticulation of the income statement and the balance sheet. Articulation of the income statement and the balancer sheet has created the insoluble dilemma of choosing either the income statement or the balance sheet as the focus of emphasis.

Some inherent problems with accounting mrasurements are also worth noting. Numbers shown in financial statements are an odd combination of nominal, ordinal, anf ratio scale, which makes valid comparisons an impossibility. Furthermore, to date no consensus has been reached on available measurement approaches, such as cost basis, replacement cost, realizable value, and discounted cash flow. Also, the issue of defining the concept of income is still outstanding in spite of sustained efforts by FASB since its establishment. There has been a long history of transaction based income determination that the FASB and IASB are trying to reverse by adopting the asset/liability or the wealth based view of income.

Transaction based income reflects the result of arm's length transactions that occur between the business and other entities. Under the asset/liabilty approach increases or decreases in income arise from changes in the underlying value of assets or liabilities held by the business entity without an exchange transaction. These two approaches affect the income statement and the balance sheet differently (Moore 2009 pp. 328 -30). Under the transaction based approach, matching of revenues and expenses was the governing principle for income statement disclosure and the resultant effect of the transaction was reflected on the balance sheet without much regard to propriety of valuation. The situation is reversed in the asset/liability approach where proper valuation of assets and liability is the priority and reported income is the resultant effect on reported income.

The reversion to the asset/liability approach started with the FASB's financial concepts project that identified present and future investors as the primary users of financial reports and declared usefulness for investment decision as the

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<sup>2</sup> See Horngren (1973), May and Sundem (1976) for examples of this point of view.

ultimate goal to be served by such reports. Hence, the focus of financial accounting and reporting standards drifted away from stewardship. Although initially stewardship and decision usefulness were recognized as the two main objectives of financial reporting, recent developments suggest that the distinction between the two objectives has disappeared. Both the FASB and IASB agree that stewardship or accountability should not be a separate objective of financial reporting by business entities in the converged conceptual framework (IASB 2005 para. 24). One of the most perplexing issues to have haunted accounting theorists is the unquestioned acceptance of income taxes as expense and the need to allocate it between periods. Even exploratory research such as Accounting Research Study No. 9 shied away from confronting the main issue

“The study does answer fundamental questions about the nature of the income tax and the validity of the concept of income tax allocation. Whether income taxes are conceptually expenses or distribution of income has not been resolved by the profession (Black 1966, vii).”

Although accounting for income taxes has been criticized by the leading accounting authors<sup>3</sup>, the FASB and its predecessor bodies have chosen to ignore the fundamental objection to treat income tax as an expense. Many noted writers such as Moonitz (1957) also argued in favor of treating income taxes as an expense on the ground that a dollar spent on income taxes was no different than a dollar spent on wages in terms their impact on interest of those for whom financial statements were prepared. Similarly, Hendricksen in his book on accounting theory (1977 pp. 467) argued that income taxes represent payment to the government for services rendered to the corporation. He also pointed out that income taxes, like franchise taxes, are associated with the right to conduct business.

No arguments against the expense would seem convincing if there is an arbitrary pre-disposition to treating income taxes as expense. But the substantive argument can be discussed on rational grounds. First, incurrence of expenses is never contingent upon the business reporting profit. It is universally recognized that the purpose of tax laws is the raising of public revenues in order to implement the socio-economic policies of the government and to provide encouragement for general industrial development, provision of national defense etc. Even if one assumed that income taxes were payments for services received from the government that could somehow be specifically determined the justification for recognizing income taxes as expense does not follow because these services are available to businesses, other groups, and individuals who have no earned taxable income.

<sup>3</sup> See Blough, 1955; Moonitz, 1957; Hill, 1957; Li, 1961; Drinkwater & Edwards, 1965; Chambers, 1968; Hawkins, 1968; Barton, 1970; Nair & Weygandt, 1981; and Vulkan & Rue, 1985 for these early criticisms.

If it is held that court decisions rather than arguments based on accounting theory are the governing factor, it becomes pointless to pursue the matter any further. However, as Walgenback (1959) correctly (but in a different context) pointed out, decisions in tax cases are not germane to deciding issues of importance in accounting theory. In matters relating to fundamental issues of recognition and reporting the pertinent law is the law of disclosure. Although courts have ruled income tax to be an excise tax on the right to earn income (Pollock vs Farmer's Loan and Trust cited in Drinkwater and Edwards, 1965 p. 580), it does not automatically mean that the accounting treatment for the two types of taxes should be the same. As Chambers (1968 p. 105) points out, companies in loss have the right to earn but pay no taxes. A tax that varies with the result of exercising a right cannot be a tax on the right.

Some have argued that income tax has the same impact on the interest of the shareholders as other expenses in terms of distributable income and future cash flows. However, this does not support the treatment of income taxes as expense either. Payment of preferred dividend or retirement of debts has the same impact on the interest of shareholders. As a matter of fact in such cases the amount and timing of the reduction in cash flow is known with much greater degree of certainty.

FASB made another attempt at tackling the criticism and confusion about the tax allocation and issued SFAS 96 (FASB 1987). This time the FASB switched the emphasis from matching of revenues and expenses to the asset/liability method moving the focus of tax accounting from the income statement to the balance sheet. Under this approach, valuation of current and non-current deferred tax assets or liabilities determines the income statement amounts. Implementation of the standard was delayed because of stiff opposition to the standard. SFAS109 (FASB 1992) was issued to bring closure to accounting and financial reporting controversies concerning deferred taxes. The companies were required to use the asset liability approach and the current tax rate to accumulate the deferred assets and liabilities that resulted when the financial accounting and tax accounting bases of their assets and liabilities diverged.

Cooley, Rue, and Allen (2004 p. 17) made the following forceful criticisms against the asset/liability approach to resolve the controversies about income tax accounting:

1) SFAS 109 indicates that individual temporary differences become taxable when the related liability is settled. However, the characteristic of a liability resulting from depreciating an individual asset using different depreciation methods are present only if the temporary difference between taxable and financial statement income that would result in future recovery of taxes if there is taxable income in the future. Since there is no surety that there will be future taxable income and if there is no taxable income or a loss in the future, there is no future economic sacrifice.

Recognition of liability is warranted only if the depreciable asset is not held to the end of its useful life.

2) Since there is no explicit or implicit contract between the business entity and the taxing authority, there is no likelihood that the government has a claim to the entity's assets for the deferred tax liability.

3) According to SFAC No. 6, future sacrifices are a result of past transactions or events. While depreciation is described as an internal event (FASB 1992 par. 138), temporary differences between taxable and financial statement income are not caused by the event of depreciation. The differences occur because of the use of alternative methods of depreciation and cannot be attributed to past transactions.


### **CONCLUDING REMARKS**

The foregoing are but a few problem areas that need to be addressed and remedied by the FASB and IASB. Many, if not all the problems are the result of deliberate accommodation of lobbyists and other pressure groups. Ever since the beginning of standard setting process in the US, the debate about accounting standards has been in the political arena. The advocates for such politicization of accounting have not been confined to the pressure groups. Very prominent academic writers such as Horngren (1973), May and Sundem (1976), and Hawkins (1975) have strongly endorsed the need for political considerations to enter into the formulation of accounting standards.

It is true that accounting standards invariably have economic impact and accounting standards are needed mainly in areas where there is controversy. It is therefore natural that some group of people will find the standard to less favorable. But although information has an effect on human behavior, it should be as neutral as possible. It cannot be neutral or reliable if it is selected for the purpose of producing some chosen effect on human behavior. Accounting is financial mapmaking and a map is not judged by the behavior it elicits (Solomon 1973, p. 36).

Convergence with, or adoption of, International Financial Reporting Standards may also face opposition because of pressure from lobbyists, politicians and other interest groups is now inextricably embedded in the standard setting process in the US and other European countries. Professionals and academicians in emerging economies need to play the important role of advocating a course of theoretical propriety rather than political expediency because such pressure groups have not yet had the opportunity to organize in their countries.

Finally

Not all accounting issues can be solved with better rules and more consistent conceptual frameworks. Allocation and boundary problems can be alleviated only by having users who are sophisticated enough to understand and distinguish between those elements of accounting reports that are objective and those that are arbitrary by their very nature. The accounting profession needs to consider why we feel compelled to change our rules and frameworks in response to each and every criticism while attorneys and doctors do not. Physicians and hospitals are not shy about making patients sign waivers of responsibility that specifically list all kinds of risks and negative outcomes. And the courts assume that legal clients not only can but should assist their attorneys in making decisions on legal strategy. In contrast, tax franchises run advertisements promising they can find "errors" that other accountants missed, reinforcing the popular idea that there is only one right answer. The accounting profession seems trapped in a cycle of constantly revising their rules and concepts. We go from method A, to method B, and eventually back to method A in reaction to a constant barrage of political crises. Perhaps it is time we seriously asked ourselves, "Does the accounting profession project an image of having correct answers because it is a weak profession, or do accountants have weak professional standing because they do not have the courage to admit publicly the inherent paradoxes and limitations of their craft?" 

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Intelligence appears to be the thing that enables a man to get along without education. Education enables a man to get along without the use of his intelligence.

~Albert Edward Wiggam

I have been speaking of measures organizations can take. But ultimately any real change will be up to the individual himself, and this is why his education is so central to the problem. For he must look to his discontents with different eye. It has been said that dominance of the group is the wave of the future and that, lament it or not, he might as well accept it. But this is contemporaryism at its worst; things are not as they are because there is some good reason they are. Nor is the reverse true. It may one day prove true, as some prophets argue, that we are in a great and dismal tide of history that cannot be reversed, but if we accept the view we will only prove it.

The organization man is not in the grip of vast social forces about which It is impossible for him to do anything; the options are there, and with wisdom and foresight he can turn the future away from the dehumanized collective that so haunts our thoughts, he may not. But he can

He must *fight* the Organization. Not stupidly, or selfishly, for the defects of individual self-regard are no more to be venerated than the defects of co-operation. But fight he must, for the demands for his surrender are constant and powerful, and the more he has come to like the life of organization the more difficult he find it to resist thee demands, or even to recognize them. It is wretched, dispiriting advice to hold before him and society. There always is; there always must be. Ideology cannot wish it away; the peace of mind offered by organization remains a surrender, and no less so for being offered in benevolence. That is the problem.

William H. Whyte Jr. , *The Organization Man*, Pg 447-448

**ARTICLE****Integration Management for Green Business  
to achieve Sustainability and Buildability**

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**ABSTRACT**

*The Building Control (Environmental Sustainability) Regulations, introduced in 2008, require buildings to attain minimum scores under the Green Mark Scheme (GMS) in Singapore. The Building Control (Buildable Design) Regulations, introduced in 2001, require buildings to attain minimum buildability scores under the Buildable Design Appraisal System (BDAS) in Singapore. It appears that both the GMS and BDAS can influence building designs and must therefore be considered concurrently to yield the optimal results. Consideration of both sets of requirements is illustrated using a case study of one 18-storey residential building. Through interviews, the study also explores the issues relating to integration management for green business, i.e. if architects consider BDAS and GMS requirements at the design conceptualization stage. The case study suggests a slight decrease in the buildability score when modifications were made to lower the residential envelope transmittance value (RETV) to obtain a higher Green Mark score. The interviews seem to suggest that architects do not consider BDAS and GMS requirements concurrently. Instead, they seem to think that considerations for BDAS and GMS do not have significant effect on each other and that on the contrary these might even complement each other.*

**INTRODUCTION**

The challenge for environmental sustainability has been both a global and national concern. In Singapore, the National Environment Agency (NEA) has responded with the National Climate Change Strategy that presents Singapore's current and future efforts to address climate change, and to mitigate the emissions of greenhouse gases. In the construction industry, the Building and Construction Authority (BCA) first launched the Green Mark Scheme (GMS) for buildings in January 2005 to promote environmental sustainability in buildings to encourage the use of various green building designs, technologies and innovations. This helps to reap benefits such as cost savings from energy usage and water consumption, reduce potential impacts on the environment and improve the indoor environment quality of the workplace.

A part from environmental issues, Singapore's construction industry also faces issues relating to low productivity. As the BCA continues to push forth sustainable developments through the GMS, green features will no longer be neglected in building designs. To achieve Green Mark certification, building designs need to fulfill a set of mandatory requirements assessed by the BCA. The extent to which green building designs are incorporated will be reflected in the resultant scores after the assessment qualify buildings for different Green Mark ratings. In 2008, the Building Control (Environmental Sustainability) Regulations was introduced, making it compulsory for building designs to achieve specified minimum Green Mark scores before their building plans can be approved by the authorities.

In addition, the Building Control (Buildable Design) Regulations, introduced in 2001, require building designs to achieve minimum buildability scores before their building plans can be approved by the authorities. The implication is that new developments will now need to take into consideration both sets of mandatory requirements from the GMS and the BDAS or the Buildable Design Appraisal System. It appears that having to fulfill the mandatory requirements to achieve Green Mark certification can in turn affect the buildability scores, and vice versa. However, it seems that the considerations in both design domains are currently being compartmentalized or at best considered separately.

Consequently, there is a need to examine the extent to which these two sets of design parameters will affect each other for designers to work efficiently towards achieving environmental sustainability and buildability.

The objectives of this study are to:

1. Examine the implications on buildability scores when the GMS requirements are being considered concurrently.
2. Explore integration management relating to the application of BDAS and GMS requirements concurrently during the design conceptualization stage.

For simplicity, this research will only examine one mandatory requirement from the GMS, specifically for residential buildings. The mandatory requirement relates to the thermal performance of the building envelope where the maximum permissible residential envelope transmittance value (RETV) is  $25\text{W/m}^2$ .

## **BUILDABILITY IN SINGAPORE THROUGH BDAS**

The low productivity rate in the construction industry in Singapore led the building authorities to popularize the concept of "buildability" which would enable the industry to raise its productivity. A buildable design is driven by three principles, namely *Standardization*, *Simplicity* and the *Single Integrated Elements*, otherwise

known as the “3S Principles of Buildable Design”. *Standardization* refers to the repetition of grids, sizes of components and connection details. A repeated layout, for example, will facilitate faster construction when formwork or precast concrete components are used. Similarly columns or external claddings of repeated sizes will reduce the number of mould changes whether on-site or in the factory [1]. *Simplicity* means uncomplicated building construction systems and installation details. A flat plate system for example, eases formwork construction as well as reinforcement works considerably. The use of prefabricated components reduces many trade operations on site and should improve site productivity provided the standardization principles are observed [1]. *Single integrated elements* are those elements that combine related components together into a single element that may be prefabricated in the factory and installed on site. Precast concrete external walls, curtain walls or prefabricated toilets are good examples of this principle [1]. With the use of these 3S principles, a design with higher buildability can be achieved.

The BDAS serves as a means to measure the potential impact of a building design on the usage of site labour. It would then result in a “Buildability Score” of the design for new and existing buildings, with a maximum achievable score of 100 points. A higher score achieved would mean that there is more efficient labour usage in the construction and thus higher site labour productivity. Although it is the aim of the BDAS to have wider use of buildable designs, good architectural designs should not be compromised. Most importantly, the ultimate goal is to have improvements in quality through buildable designs. The computation in the buildability score consists of three components:

1. *Structural System* - with a maximum of 50 points which requires the building designer to use different structural systems for the most practical design;
2. *Wall System* - with a maximum of 40 points which requires the designer to use different wall systems for the most practical design; and
3. *Other Buildable Design Features* - with a maximum of 10 points which takes into consideration the level of standardization of columns, beams, windows and doors, together with grids and usage of precast components [1].

Within these three components, a Labour Saving Index (LSI) is given to each building system and also for the use of prefabricated reinforcement cages in cast in-situ component. A high index implies that the design is more buildable and fewer site workers are needed. Using these indices, and measurements of the components, the buildability score is then calculated. Due to space limits, it suffices to say that a detailed example of buildability score computation can be found in the Code of Practice for Buildable Design [1] and will not be elaborated here.

Legislation for the BDAS is facilitated through the Building Control (Buildable Design) Regulations 2001 leading to the approval of building plans. Section 5 of the regulations makes submission of the buildability scores to the Commissioner of Building Control compulsory and should be endorsed by all the qualified persons. Under the Building Control Act, the "Qualified Person" means a person who is registered as:

- (a) An architect under the Architects Act (Cap. 12) and has in force a practicing certificate issued under that Act; or
- (b) A professional engineer under the Professional Engineers Act (Cap. 253) and has in force a practicing certificate issued under that Act.

In addition, the buildability score of the development needs to comply with the minimum score provided in the Code. Different minimum scores are applicable across different categories of building development and gross floor areas.

#### **SINGAPORE'S GREEN MARK SCHEME**

As of 2005, commercial and institutional buildings accounted for 16% of Singapore's CO<sub>2</sub> emissions (largely from cooling and lighting functions) [2]. In order to reduce this percentage of CO<sub>2</sub>, the BCA first launched the Green Mark for Buildings Scheme (Green Mark) in 2005 as a bold initiative to move Singapore's building and construction industry towards environment-friendly buildings and help strengthen Singapore's position as a global city committed to balancing its development with care for the environment [3].

The Singapore government introduced the Building Control (Environmental Sustainability) Regulations together with the Code for Environmental Sustainability of Buildings [4] specifically for this purpose. The legislation requires the building owners or developers to engage relevant personnel to assess and tabulate a Green Mark score which will be indicated during the submission of building plans for approval by the BCA. The Code sets out the minimum environmental sustainability standard that is on par with the Green Mark Certified standard for buildings and includes the compliance method for determining the level of environmental performance of a building development [5].

At the end of the Green Mark assessment exercise, the score obtained will allow the building development to be eligible for different ratings namely: GM Certified, Gold, Gold Plus and Platinum.



Based on the GMS, the environmental performance of a building is assessed based on five criteria namely:

1. *Energy Efficiency* - This category focuses on the approach that can be used in the building design and system selection to optimize the energy efficiency of buildings [5].
2. *Water Efficiency* - This category focuses on the selection of water use and its efficiency during construction and building operations [5].
3. *Environmental Protection* - This category focuses on the design, practices and selection of materials and resources that would reduce the environmental impacts of built structures [5].
4. *Indoor Environmental Quality* - This category focuses on the design strategies that would enhance the indoor environmental quality which includes air quality, thermal comfort, acoustic control and day-lighting [5].
5. *Other Green Features* - This category focuses on the adoption of green practices and new technologies that are innovative and have potential environmental benefits [5].

Since its launch in 2005, the BCA has been actively promoting sustainable development to the private sector in the construction industry through the numerous incentives given, apart from regulations. For example, the Green Mark Incentive Scheme was offered in 2006 as direct monetary incentives to developers who achieved a green building rating above the basic certified level. The Ministry of National Development launched a \$50 million R&D Research Fund to encourage research into the development of more viable and cost-effective green building technologies and energy efficiency solutions [6]. The BCA also launched the BCA Green Mark Champion award in 2008 to recognize the leaders amongst developers and building owners in Singapore's green building movement. Apart from recognizing the developers, the contractors were also recognized for their environmental efforts with the Green and Gracious Builder Awards introduced in 2009 [6]. In addition, the 2<sup>nd</sup> Green Building Master Plan included a new incentive scheme: the Green Mark Gross Floor Area (GM GFA) Incentive Scheme which awards additional gross floor area to developers who earned higher-tier Green Mark awards for new buildings and reconstruction projects [6]. Furthermore, a \$100 million Green Mark Incentive Scheme for Existing Buildings (GMIS-EB) was introduced to encourage private building owners of existing buildings to undertake retrofits to achieve significant improvement in energy efficiency [6]. A target was set to encourage at least 80% of existing buildings to be GM certified by 2030. With all these drivers in place, it will not be long before the aim of the developers is not just to meet the minimum requirements for the GMS but to push further for higher standards of environmental sustainability in buildings.

## INTEGRATION OF BDAS AND GMS

The scope of this paper is limited to examining two mandatory requirements under the GMS which relates to firstly, the thermal performance of the building envelope in residential buildings and; secondly, the indoor comfort of dwelling units which will be further elaborated. These requirements under the GMS will be considered concurrently with its impact on the three components from the BDAS. The reason for examining the requirements for the thermal performance of building envelope specified in the Code for Environmental Sustainability of Buildings lies in the relatively high allocation of points in this domain compared to the other criteria (see Appendix A). In addition, there is also a greater relevance for integration between the GMS and the BDAS here. The thermal performance is determined by the residential envelope transmittance value (RETV) and where building designers are encouraged to design different façade or wall systems with lower RETV. At the same time, the Wall System component from the BDAS should also be taken into consideration by selecting a wall system that has a higher Labour Saving Index. Considering the requirement to enhance the indoor comfort of dwelling units, the layout of the residential units should provide adequate openings for good ventilation which would in turn affect the Wall System component in the BDAS. Therefore, the commonalities between the GMS and the BDAS in this context would possibly allow for integration to enhance the efficiency of design development in building projects.

The following requirements from the GMS suggest some linkages with the components in the BDAS. With reference to the Code for Environmental Sustainability for Buildings, under Part 5 Other Green Features, Environmental Protection,

1. Use of precast toilets with higher points awarded for higher percentage used within the building. Under the BDAS, the use of prefabricated bathroom or toilet units will also allow more points to be awarded.
2. Provision of green roof and roof top garden result in points awarded under the GMS and at the same time, this can in turn affect the scoring for the sub-category, “Roof System”, under the “Structural System” component in the BDAS.
3. Provision of vertical greening will allow points to be awarded under the GMS and this can affect the scoring under the “Wall System” component in the BDAS.

Arising from the above analysis, Figure 1 shows the possible requirements that overlap between the GMS and the BDAS. Hence, it can be observed that there is a need for concurrent considerations in design development between the GMS and the BDAS to ensure that the designs for environmental sustainability are not drawn

up at the expense of buildability and vice versa. The bold arrows in Figure 1 show the two mandatory requirements from the GMS that are being considered in this study and the normal arrows show the possibility of other requirements in the GMS having an impact on the BDAS.

## V. CASE STUDY

The aim of this case study is to provide further examination of the requirements in the GMS and the BDAS, identify any effects they have on each other and the extent of these effects. For the purpose of this paper, only the criteria for energy efficiency will be considered within the scope of this study. This can be justified by the significant amount of points allocated to energy efficiency. Appendix A shows the framework, and point allocations for the criteria in the residential building category. It can be seen that out of 100 points, 65 points have been allocated to the criteria under energy efficiency notwithstanding the bonus points. In addition, design considerations for energy efficiency can be related to buildability more readily than the rest of the criteria. Furthermore, only the “RB 1-1 Building Envelope – RETV” will be examined in details with its effect on buildability because this has higher points allocated within the Energy Efficiency criteria.

The case study will make reference to the hypothetical example given in the Code of Practice on Buildable Design. The project with a buildability score of 81 points consists of a single block residential building that is 18-storey high with no basement. Each storey is assumed to be of a typical floor layout with five residential units per storey. The floor-to-floor height is 3.3m, except the 1<sup>st</sup> storey, which is 4m high (see Figure 2). Figure 2 shows the typical floor layout of each level and the formula for the buildability score is given as follows:

$$BS = 50[\Sigma(A_s \times S_s)] + 40[\Sigma(L_w \times S_w)] + N + \text{Bonus Points}$$

Where:

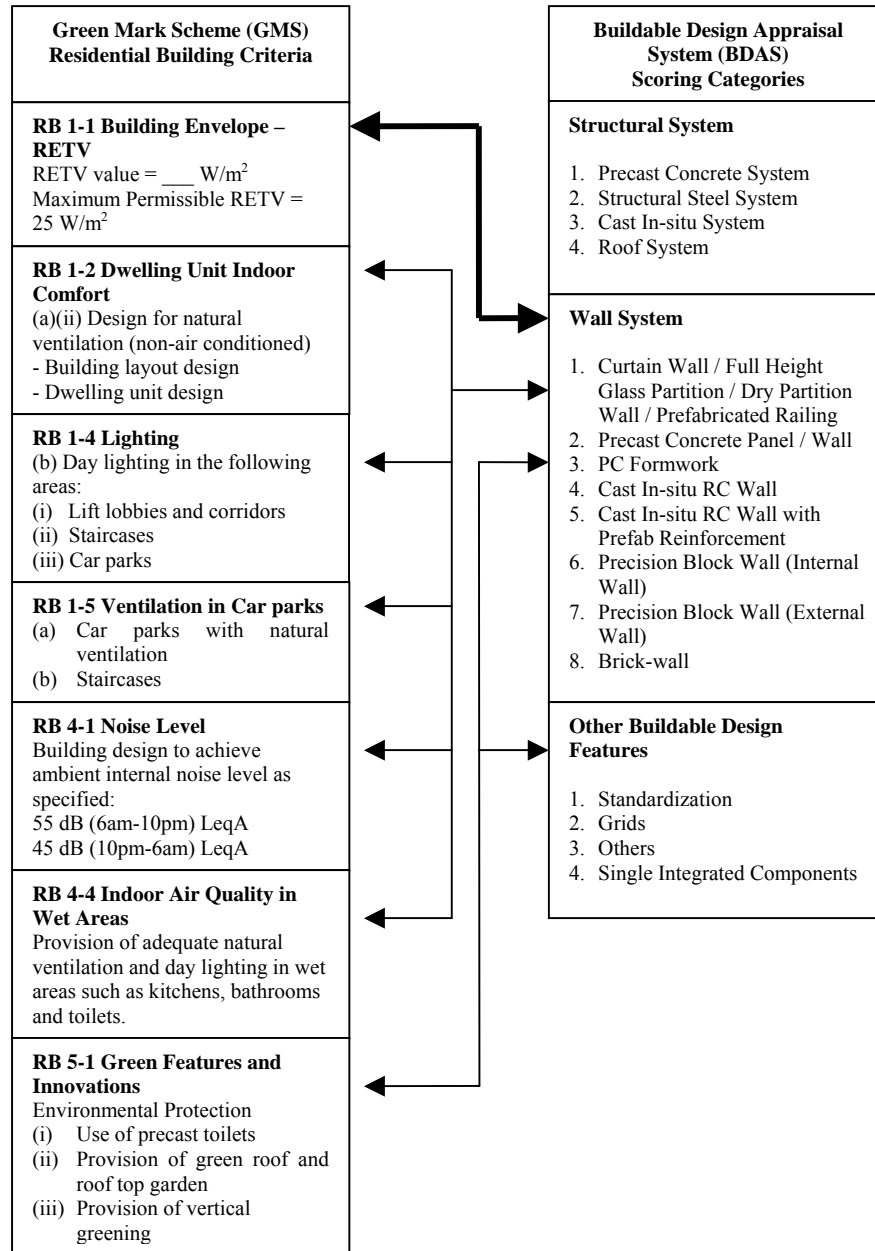
$$A_s = A_{sa} / A_{st}$$

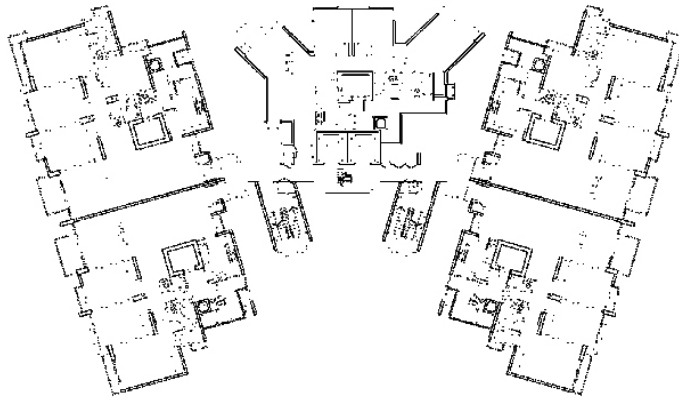
$$L_w = L_{wa} / L_{wt}$$

$A_s$  = Percentage of total floor area using a particular structural system

$A_{st}$  = Total floor area which includes roof (projected area) and basement area

$A_{sa}$  = Floor area using a particular structural system





Source: Reference [1]

Figure 2. Typical floor layout

$L_w$  = Percentage of total external and internal wall length using a particular wall system

$L_{wt}$  = Total wall length, excluding the length of external basement wall for earth retaining purpose

$L_{wa}$  = External & internal wall length using a particular wall system

$S_s$  = Labour saving index for structural system

$S_w$  = Labour saving index for external and internal wall system

$N$  = Buildability Score for other buildable design features

Bonus points = Bonus points for the use of single integrated components

For more details on the breakdown of the buildability scores for the three components: structural system, wall system and other buildable features, reference should be made to the Code of Practice for Buildable Design [1].

## VI. RB1-1 BUILDING ENVELOPE – RETV

Based on the Code for Environmental Sustainability of Buildings [5], the thermal performance of building envelope to minimize heat gain (thus reducing the overall cooling load requirement) is quantified based on the calculated residential envelope transmittance value (RETV). According to the BCA's Code on Thermal Performance for Buildings [7], the RETV involves three basic elements of heat gain through the exterior walls and windows of a building. These would include: heat conduction through opaque walls, heat conduction through glass windows and solar radiation through glass windows [7]. The Code on Thermal Performance for Buildings provides the following formula for the calculation of RETV:

$$RETV = 3.4(1 - WWR)U_w + 1.3(WWR)U_f + 58.6(WWR)(CF)(SC)$$

Where:

RETV = residential envelope transmittance value (W/m<sup>2</sup>)

WWR = window-to-wall ratio (fenestration area/gross area of exterior wall)

U<sub>w</sub> = thermal transmittance of opaque wall (W/m<sup>2</sup> K)

U<sub>f</sub> = thermal transmittance of fenestration (W/m<sup>2</sup> K)

CF = correction factor for solar heat gain through fenestration

SC = shading coefficient of fenestration

Based on the formula given in the Code [7], it can be observed that the RETV is dependent on the properties of the materials, like the thermal transmittance value, correction factor of solar heat gain and the shading coefficient selected by the architect to be used in the design and also, the window-to-wall ratio. In order to achieve a lower RETV to mirror the ability of the building envelope to minimize significantly the heat gain, the value of the variables found in the equation should be kept to the minimal. The variable that is related to buildability would be the window-to-wall ratio since this would affect the productive design and construction of the building. The remaining variables primarily involve the selection of the material properties. Hence, in this case study, the RETV will be modified to the desirable level and the resultant window-to-wall ratio will be determined. The remaining variables would be assumed with fixed values.

Based on the Code for Environmental Sustainability of Buildings [5], the maximum permissible or baseline RETV that is achieved by the building envelope

should be  $25 \text{ W/m}^2$  and up to 15 points can be scored with better thermal performance than the baseline standard. 3 points will be awarded for every reduction of  $1 \text{ W/m}^2$ . Therefore, to achieve the maximum point, there should be a reduction of  $5 \text{ W/m}^2$  and the building envelope's targeted RETV should be at  $20 \text{ W/m}^2$ . For the purpose of this evaluation, it is assumed that the RETV is  $25 \text{ W/m}^2$  for the hypothetical residential block since this is the maximum permissible value and targeted RETV is  $20 \text{ W/m}^2$  in order to achieve the maximum points provided for in the GMS. Subsequently, the buildability score will be recalculated accordingly.

Since the change in RETV is  $5 \text{ W/m}^2$  and assuming  $U_w$ ,  $U_f$ , CF and SC are at values which are typical of residential buildings, the change in window-to-wall ratio is approximately 25%. This is calculated using the formula that is stated above for RETV. In other words, in order to reduce the RETV from  $25 \text{ W/m}^2$  to  $20 \text{ W/m}^2$ , there needs to be a reduction in the window-to-wall ratio by some 25%. Consequently, there would be a reduction in coverage of windows by 25% that leads to an increase in the curtain wall length. It is proposed that the two windows of  $1\text{m} \times 1\text{m}$  be reduced from each apartment unit. Correspondingly, there will be a deduction of ten windows for every storey, there being 5 apartment units on each floor.

The changes are summarized as follows:

1. Reduction of window coverage by 25% to 60% from the original 85%.
2. Curtain wall length to be increased due to the decrease in window usage.
3. The additional curtain wall length would be  $(1 \times 1 \times 2 \text{ windows/unit} \times 5 \text{ units/floor}) \times 18 \text{ floors} = 180\text{m}$ .
4. Table 1 is extracted from the Code of Practice on Buildable Design [1] which shows the calculation of the buildability score for the single block of residential building. The table will indicate where the changes are made after the RETV is reduced from  $25$  to  $20 \text{ W/m}^2$ .

From Table 2, the new buildability score of 79.94 points is obtained after incorporating the changes to reduce the RETV in order to achieve the maximum points possible under the GMS. This new score is a slight reduction from the initial 81 points. However, it should be noted that the reduction in RETV can also be achieved through the careful selection of glass materials for the windows which is evident from the variables in the formula for RETV. Nevertheless, this suggests that there is a possibility that requirements in the GMS can affect the BDAS score in a

negative manner. As a result, there is a need to find out if industry practitioners are considering designs to meet the GMS and the BDAS requirements concurrently.

### INTERVIEW FINDINGS

Architects were selected for the in-depth interviews because they manage the designs from the conceptualization stage to the detailed stage. Furthermore, they are also responsible for the tabulation of both the GMS and the BDAS scores before the submission of the building plans for approval by the authorities. Based on personal contacts, five architects were interviewed during the month of August and September 2009. The five interviewees have working experience ranging from 15 years to 40 years and each interviewee has at least been involved in one residential project. The reasons for not concurrently considering the designs to meet the GMS and the BDAS requirements were also explored to uncover the barriers for integration.

**TABLE 1**  
**BDAS SCORE FOR SINGLE BLOCK RESIDENTIAL BUILDING**  
**(ORIGINAL COMPUTATIONS)**

Description	Labour Saving Index	Area (m <sup>2</sup> ) or Length (m)	Coverage (%)	Buildability Score
<b>Structural System</b>				
(1) Flat plate for apartment area + Roof	$S_s = 0.90$	12,272.10 m <sup>2</sup>	86.32%	38.84
(2) RC beam/slab for lift lobby area + Roof	$S_s = 0.50$	1,945.60 m <sup>2</sup>	13.68%	3.42
Total		14,217.70 m <sup>2</sup>	100.00%	42.26
<b>Use of prefabricated reinforcement</b>				
Welded mesh for cast in-situ floor slab 86% of total floor area	0.03		86.00%	1.29
Total (a)				<b>43.55</b>



<b>Wall System</b>				
(1) Full height glass and railing	$S_w = 1.00$	408.60 m	3.86%	1.55
(2) Curtain Wall	$S_w = 1.00$	717.30 m	6.78%	2.72
(3) Precast concrete wall	$S_w = 1.00$	5,204.20 m	49.22%	17.72
- skim coat and paint finish	$S_w = 0.90$	885.00 m	8.37%	1.67
(4) Cast in-situ RC wall (staircase and lift shaft)	$S_w = 0.50$	1,963.90 m	18.58%	3.34
- plaster and paint finish				
(5) Precision blocks (internal wall)	$S_w = 0.45$	313.60 m	10.22%	1.23
- skim coat and paint finish				
(6) Precision blocks (internal wall)	$S_w = 0.40$	1,080.20 m		
- tiled finish				
(7) Precision blocks (external walls)	$S_w = 0.30$			
- skim coat and paint finish				
Total (b)		10,572.80 m	100.00%	<b>28.69</b>
<b>Other Buildable Design Features</b>			86%	N = 2.00
(1) Standardization of columns (0.5M)			85%	N = 1.00
(2) Standardization of door leaf openings (width) (0.5M)			85%	N = 1.00
(3) Standardization of windows (1M/1M)			100%	N = 2.00
(4) Repetition of floor-to-floor height (0.5M)			100%	N = 1.50
(5) Precast refuse chutes			85%	N = 1.00
(6) Ground beams on top of pilecaps				
Total (c)				<b>8.50</b>
<b>Score of Project (a) + (b) + (c)</b>				<b>81</b>

Source: Reference [1]

**TABLE II**  
**RECOMPUTED BDAS SCORE FOR SINGLE BLOCK RESIDENTIAL BUILDING**

Description	Labour Saving Index	Area (m <sup>2</sup> ) or Length (m)	Coverage (%)	Buildability Score
<b>Structural System</b>				
(1) Flat plate for apartment area + Roof	S <sub>s</sub> = 0.90	12,272.10 m <sup>2</sup>	86.32%	38.84
(2) RC beam/slab for lift lobby area + Roof	S <sub>s</sub> = 0.50	1,945.60 m <sup>2</sup>	13.68%	3.42
Total		14,217.70 m <sup>2</sup>	100.00%	42.26
<b>Use of prefabricated reinforcement</b>				
Welded mesh for cast in-situ floor slab 86% of total floor area	0.03		86.00%	1.29
Total (a)				<b>43.55</b>
<b>Wall System</b>				
(1) Full height glass and railing	S <sub>w</sub> = 1.00	408.60 m	3.80%	1.52
(2) Curtain Wall	S <sub>w</sub> = 1.00	897.30 m	8.34%	3.34
(3) Precast concrete wall - skim coat and paint finish	S <sub>w</sub> = 0.90	5,204.20 m	48.40%	17.42
(4) Cast in-situ RC wall (staircase and lift shaft) - plaster and paint finish	S <sub>w</sub> = 0.50	885.00 m	8.23%	1.65
(5) Precision blocks (internal wall) - skim coat and paint finish	S <sub>w</sub> = 0.45	1,963.90 m	18.26%	3.29
(6) Precision blocks (internal wall) - tiled finish	S <sub>w</sub> = 0.40	313.60 m	2.92%	0.47
(7) Precision blocks (external walls) - skim coat and paint finish	S <sub>w</sub> = 0.30	1,080.20 m	10.05%	1.21
Total (b)		10,572.80 m	100.00%	<b>28.89</b>
<b>Other Buildable Design Features</b>				
(1) Standardization of columns (0.5M)			86%	N = 2.00
(2) Standardization of door leaf openings (width) (0.5M)			85%	N = 1.00
(3) Standardization of windows (1M/1M)			60%	N = 0.00
(4) Repetition of floor-to-floor height (0.5M)			100%	N = 2.00
(5) Precast refuse chutes			100%	N = 1.50
(6) Ground beams on top of pile caps			85%	N = 1.00
Total (c)				<b>7.50</b>
<b>Score of Project (a) + (b) + (c)</b>				<b>79.94</b>

Source: adapted from Reference [1]

Most of the interviewees expressed that they do consider designs for the GMS and the BDAS concurrently but upon further probing, seems to show otherwise. This can be seen through the allocation of work within the team of architects during the design conceptualization stage where different architects take charge of the design considerations for the GMS and the BDAS separately and the final decision would be made by the lead architect in charge of the project. This would seem to suggest that it is not possible to design concurrently to meet both the GMS and the BDAS requirements. According to Interviewee C,

*“In my office, different people do it. The more experienced one will do the BDAS. It’s just allocation of work, just happen to be I was the one who is doing the Green Mark but not BDAS. My architect in charge, the Senior Project Manager, she knows what’s happening. But for me, I’m a junior at that time, so I only do the Green Mark so I know roughly what it’s [BDAS] about but I didn’t go into it.”*

Interviewee E expressed that the design considerations are done by different architects or members in the team,

*“Usually, this is the case because in a team you have different people, you have the technical people, the architects, the assistants, and the draftsman so we will have to work together but one person will make the overall decision.”*

Furthermore, it seems that having to comply with both sets of legislative requirements come across as a paper exercise rather than to have a genuine concern to design to meet the requirements for both environmental sustainability and buildability concurrently. According to Interviewee D,

*“When you do all these things, you’re just wanting to get marks and it always meeting all these mandatory points that you say pass or fail, before we can do our submission and it becomes, like what I’ve said, a theoretical exercise and then along the way, skim a bit here and there. There’s this aspect of trying to look at the requirements and making your building work towards it.”*

In addition, Interviewee D expressed that,

*“The technical people will do the calculation of the scores. So we will work on the designs and they’ll check and look into the different design areas. Those that do not comply will be reported and we’ll see how we can allocate something so that the points can be increased to achieve the required score.”*

Hence, this lack of genuine concern and treating it as a “theoretical exercise” does not seem to be conducive to designing for the GMS and the BDAS concurrently. In addition, meeting the minimum requirements for the GMS and the

BDAS does not appear to be of a great concern as the tabulation for these scores are done at the end of the design development stage by the technical staff within the team of project architects. Unless the requirements are not met, the designs will not be modified. This seems to suggest that whether such requirements are met would be of secondary importance relative to the original design.

Based on the feedback from most of the interviewees, it appears that designers do not consider the designs for the GMS and the BDAS concurrently in order to meet minimum requirements. With this observation, the reasons for this mode of operation would be further examined.

One reason cited for not considering the design requirements for the GMS and the BDAS concurrently is due to the short time period since the GMS has been mandated when compared to the BDAS which was mandated in 2001. Hence, designs that have been drawn up just before the GMS were mandated could have been considered concurrently with the BDAS. According to Interviewee C,

*“GM is quite a new thing, it came out about 4 years ago, if I remember correctly. BDAS is about 10 years ago. So when GM came out there was a lot of re-education...BDAS is mandatory, it is a must. At that time GM wasn't but now it is ... because it is new, and new buildings take a long time to build and all that, so when the project started it is hard to come back already. You know like when you usually design and it goes on and you suddenly have to put all these [requirements] in, of course they give you a period of time where you can have a buffer. You know they give you a buffer period. So when I worked on the project then I got to be more familiar with this (for Green Mark). BDAS was...I know BDAS is a requirement but it just happened that it wasn't done by me at that time...for this project I was working on.”*

The points that have earlier been mentioned above can also be seen as the reasons for not considering both the GMS and the BDAS concurrently even though the requirements can affect one another. This is because the work allocation is planned in such a way that does not allow this to take place. Based on the response from Interviewee C, it appears that the design considerations for the GMS and the BDAS were undertaken by different persons within the project team. According to Interviewee C,

*“So I remember we were working together, but we didn't communicate too much, so it was just that this part someone calculates then we will come back at the end.”*

Hence, the lack of communication between the designers seems to be the reason for not having both sets of design requirements considered concurrently and

also prevent parties from seeing how designs for the GMS could affect those for the BDAS.

Furthermore, depending on the size of the firm, architects might not be involved in the computation for the GMS and the BDAS and these are left to the responsibility of the technical staff. In the case of Interviewees C and E, the tabulation of both scores is undertaken by the technical staff. For Interviewee D, the technical staff will tabulate the BDAS score whereas the GM score may be undertaken by the architect in charge. According to Interviewee D,

*“Usually in big firms like ours, we have people who are specialized in doing things, for buildability score, our guys, the technical staff will work on it but for GM, still at a design level stage, the architects will play a bigger role that means to decide over what is to be taken up. In terms of calculation it is very easy also. Architects can usually do that. But for buildability, I think it is quite easy, it’s just that it is very tedious. You know, spending the architect’s time, it is very tedious, you start measuring, wall, floor, columns for every part of the building.”*

Most of the architects interviewed also agreed that in the near future, more importance could be given to designs for the GMS rather than the BDAS. Most of them also agreed that the mandated requirements from these two domains might affect one another; however, the extent of it would not be too great as the areas concerning the designs for the GMS appears to be different from the BDAS. According to Interviewee E,

*“Green Mark is more on the compliance of M&E and energy. So it is not so much of buildability. Buildability is more on the aesthetics, construction methods.”*

Interviewee D expressed that,

*“I think GM probably encompasses more. Buildability focuses only on...of course it focuses on the design stage and it focuses on the practicality during site construction so really it’s only these two areas I think.”*

Hence, this suggests another reason for the lack of concurrent design considerations because the designers view it as different entities which do not affect one another significantly. Interviewee C also suggested that the requirements for “BDAS is more simple than GM”. In addition, Interviewee C believed that the designs for the GMS will complement the BDAS and therefore whether these designs are considered alongside each other does not seem to pose a grave issue. According to Interviewee C,

*“It doesn’t affect each other in fact I think it complements each other even if it is separated it is ok. Because when we did the BDAS, all the wall system being modular and all, prefab and all helps us in the Green Mark score. Because under the green mark category you have the pre-fabricated bathrooms, you know under the special item, the bonus marks, under that item it helps us. And we use dry wall also; modular kind of thing, internal partitions, and this also helps us to score in the green mark. So actually they complement each other so even if they are considered separately, it is ok because they don’t affect each other.”*

This could perhaps be the most crucial reason for the lack of integration in the designs for the GMS and the BDAS as the impact on one another does not warrant the attention to do so. Furthermore, with the possibility of impacting each other positively, this seems to suggest that there is no significant need to consider the designs for these two sets of mandatory requirements simultaneously.

In particular, it appears not to be too difficult to fulfill the minimum requirements, according to Interviewee D,

*“A lot of these designs that we churn out during the design stage, it’s quite standard. For example, you need to have certain requirement for ETTV, a lot of these technologies are out there it’s quite common, so you specify it accordingly and meet these requirements and naturally at that point, it is a given. We don’t need to fight for it.”*

Therefore, having to meet minimum requirements does not pose as great a challenge and hence importance would be placed on other aspects of the design. Moreover, there is the mindset that the GMS and the BDAS do not affect each other greatly and hence, naturally designers are not inclined to consider these designs concurrently. This also seems to suggest that there could possibly be unequal importance placed on designing buildings for the GMS and the BDAS currently.

This difference in importance could be attributed to the increasing emphasis given by the authorities in the development of buildings to meet environmental sustainability where the government is giving more incentives and benefits to the developers and the contractors. This reason was supported by Interviewee A. The 2<sup>nd</sup> Green Building Master Plan, for example, includes a new incentive scheme [6]: Green Mark Gross Floor Area (GM GFA) Incentive Scheme which awards additional gross floor area to developers who have earned higher-tier Green Mark awards for new buildings and reconstruction projects. In addition, the \$100 million Green Mark Incentive Scheme for Existing Buildings (GMIS-EB) added another push in this direction. With these in mind, there is no doubt that the developers will give more attention to fulfilling the requirements for the GMS, thus down playing the BDAS. All the interviewees agreed that greater emphasis is being given to the

GMS than the BDAS and according to Interviewee A, it is “improving and increasingly” the case. Such greater importance given to the GMS was placed solely because of the incentives given. Interviewee B expressed that,

*“Probably in the long run, GM should be the one that takes precedence because there are many very basic physical things people can or architects can, employ physical means which can save the very nature of the earth. But GM yes, it is unfortunately heading into a place where there are floods, hurricanes and everything else. We want to cut down on all that we have been abusing the world too much. Yes I agree that it is important over buildability.”*

On the other hand, Interviewee D opined that,

*“Well let’s just say green mark is the flavor of the day right now, the fashion of this big decade or so and after a while green mark will naturally become a norm, very much like buildability...Buildable design I think it is very stable, I don’t think it will have that influence that they had years ago, I think there’s so much more we can do with buildability but of course with new technology basically the appraisal system will be suited to the technology that is coming.”*

The only exception given would be from Interviewee A who believed that there should be equal importance placed in the design considerations for the GMS and the BDAS. According to Interviewee A,

*“There is equal importance, we will achieve as much as we can, as I have said they help each other so if you can score well in buildability score, you can also score well in green mark so definitely, we can score the best for both unless there is a design or site constraint. Because the site is a rectangular site so the long side happens to face west so we don’t want to change our concept design to be a square block or round block, we want a linear one so for that one we don’t score. We give up. In the end, we will balance up with other items. Because the design concept is why we are appointed architect for the project so that we can’t change the concept design.”*

Furthermore, based on the response from Interviewee A, this seems to suggest that any difference in importance placed would be due to the requirements of the client. Accordingly, Interviewee A shared that

*“This was stated right at the start when it [project] was awarded to us, they [developer] would tell us it is ear marked for green mark and it was ear marked for all these awards.”*

As the developer or the client has the final decision in the project, architects will be following the instructions given by their paymasters. Hence, it comes as no surprise that there is a changing emphasis in design considerations. Hence, according to Interviewee D who indicated that the GMS is the “flavour of the day” right now, developers are more likely to require more design considerations for the GMS than the BDAS. Hence, architects are also more likely to just meet the minimum requirements for BDAS and to try to achieve higher GM score when requested by their clients.

## CONCLUSION

With the reasons that have been identified from the responses of the interviewees, it seems that the architects do not think that it is necessary to consider the requirements for the GMS and the BDAS concurrently. The reason cited by Interviewee E is that both sets of mandated requirements do not have the same objective. The BDAS aims to look at designing the building for modularity and adopting methods of construction for buildability whereas the GMS considers the designs of the components in the building for environmental sustainability. Since these are two different facets of construction, despite being related, it may not be possible to design for these two areas concurrently. In addition, Interviewee C believed that

*“...they complement each other so even if they are considered separately, it is ok because they don’t affect each other. It doesn’t undercut or what, I don’t think so...”*

*“...then architects don’t have to go through two exams, just go through once and pass everything. It’s not a bad idea. But will it dilute the focus for what it’s meant to be? Maybe you don’t even need buildability score; you just integrate into green mark. Because it’s related, like I said, if you score points for BDAS you will score points for GM”*

Nevertheless, Interviewee C observed that the requirements for the BDAS could be integrated into the GMS so that there would only be one set of requirements to fulfill which could possibly lead to greater efficiency. However, Interviewee C pointed out that there might be a possibility of “diluting the focus of what [the requirements are] meant to be”. Hence, even with the integration, this possibility should be kept in mind.

Although it seems that the designs for the GMS and the BDAS may affect one another based on technical calculations of their respective scores, the two Codes spelling out the GMS and the BDAS may also be complementary, as suggested by one of the interviewees. Hence, there can be an integration of the two Codes of



Practice [1, 5] to bring about greater efficiency and also to achieve more holistic benefits of buildings not just in terms of environmental sustainability but also better productivity through buildability. After the case study which involves the technical aspects of calculating the scores have been discussed, the non-technical issues were examined through interviews with practicing architects. The same conclusion can be drawn from the case study and interviews, that the effects that the GMS requirements have on the BDAS may not be significant due to the different objectives for the two Codes [1, 5] with different considerations. Furthermore, should there be any negative influence, the effect may not be that great enough to warrant the integration of the two Codes. There appears to be a lack of a strong driver required for the integration of the two Codes to motivate practitioners to consider the designs for the GMS and the BDAS concurrently. The related issues are:

1. *People.* Building designers do not see the need to consider the designs for the BDAS and the GMS concurrently and such practice seems to be lacking in the industry. One interviewee has also expressed that there is a lack of skills to do so should there be established that there is such a need to progress in this direction.
2. *Projects.* In addition, work is typically allocated to different parties in the design team amongst the architects and engineers. This appears to render communication amongst the building designers ineffective and results in a barrier to designing for the GMS and the BDAS requirements concurrently.
3. *Systems support integration.* There is also the lack of availability of suitable softwares that can aid the building designer to consider the BDAS and GMS requirements simultaneously during the design.

From the interviews, it seems that for integrative practices to be successfully implemented, the trigger will need to be government or client-led. Hence, the effectiveness of integrating the design requirements of the GMS and the BDAS should be looked into and to highlight the possibilities of any benefits that can be derived from there so that there can be more incentives for building designs to adopt such an integrative practice.

The case study presented in this paper is only limited to two criteria under the “Energy efficiency” category of the GMS. In order to have more conclusive results of the effects that the mandatory requirements of the GMS have on the BDAS, the rest of the requirements should also be examined further. One particular area to look into would be the requirements for “Sustainable Construction” in “Part 3 Environmental Protection” in the Code for Environmental Sustainability of Buildings [5]. In addition, different types of developments and different building types may

result in different outcomes for the GMS and the BDAS. Hence, there is also a need to look into the non-residential buildings and to evaluate the effects these two design parameters have on each other. Furthermore, a cost and benefit analysis can also be undertaken to examine if it is beneficial to the industry to implement a new set of criteria which encompasses both the BDAS and the GMS.

In the final analysis, the study suggests that issues relating to integration management for green business are not as simplistic as these may seem to be initially.

#### ACKNOWLEDGEMENT

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Appendix A  
Framework For Gms – Residential Buildings

Table 4.1.1(a) : Framework and Point Allocations for Residential Building Criteria

		Category	Point Allocations		
<b>(I) Energy Related Requirements</b>					
Maximum Cap of 50 points	Minimum 30 points	<b>Part 1 : Energy Efficiency</b>			
		RB 1-1 Building Envelope – RETV	15		
		RB 1-2 Dwelling Unit Indoor Comfort	16		
		RB 1-3 Natural Ventilation in Common Areas	2		
		RB 1-4 Lighting	15		
		RB 1-5 Ventilation in Carparks	8		
		RB 1-6 Lifts	2		
		RB 1-7 Energy Efficient Features	7		
		<b>Category Score for Part 1 – Energy Efficiency (Exclude Bonus Points)</b>	<b>65</b>		
BONUS 20 points	RB 1-8 Renewable Energy (Bonus Points)		20		
<b>(II) Other Green Requirements</b>					
Maximum Cap of 50 points	Minimum 20 points	<b>Part 2 : Water Efficiency</b>			
		RB 2-1 Water Efficient Fittings	10		
		RB 2-2 Water Usage	1		
		RB 2-3 Irrigation System	2		
				<b>Category Score for Part 2 – Water Efficiency</b>	<b>13</b>
				<b>Part 3 : Environmental Protection</b>	
		RB 3-1 Sustainable Construction	12		
		RB 3-2 Greenery	6		
		RB 3-3 Environmental Management Practice	9		
		RB 3-4 Public Transport Accessibility	2		
				<b>Category Score for Part 3 – Environmental Protection</b>	<b>29</b>
				<b>Part 4 : Indoor Environmental Quality</b>	
		RB 4-1 Noise Level	1		
		RB 4-2 Indoor Air Pollutants	3		
		RB 4-3 Waste Disposal	1		
		RB 4-4 Indoor Air Quality in Wet Areas	1		
				<b>Category Score for Part 4 – Indoor Environmental Quality</b>	<b>6</b>
		<b>Part 5 : Other Green Features</b>			
RB 5-1 Green Features & Innovations	7				
		<b>Category Score for Part 5 – Other Green Features</b>	<b>7</b>		
		<b>Total Points Allocated :</b>	<b>120</b>		
		<b>Total Point Allocated (Include BONUS points):</b>	<b>140</b>		
		<b>Green Mark Score (Max) :</b>	<b>100 + Bonus 20 points</b>		

Source: Reference [5]

Private ownership of the means of production in a highly industrialized economy has produced the modern corporation, through which the financial resources of large numbers of people are pooled, ownership and management are separated, and vast enterprises launched and operated. Given the central place of the private corporation in our institutional life, the ideals and standards of management, in particular management's conception of the social obligations of the corporation, will have a great deal to do with the kind of society in which we live. In recent times, the strategic place of the corporation has presented management with a new problem: whether to construe the role of the corporation narrowly as a strictly amoral business enterprise organized to maximize profits, or to accept a broader, socially oriented interpretation of the responsibilities of the corporation that would include the welfare of the community.

Harry K. Girvetz, Editor, *Contemporary Moral Issues* pg 197

**ARTICLE**

## **Foreign Direct Investment and Manufacturing Export in Nigeria**

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**ABSTRACT**

*The potential impact of Foreign Direct Investment (FDI) on recipient and investing economies is of considerable policy interest (Pain and Wakelin, 1997). Important to the theory of foreign investment in Nigeria is the question whether foreign investors coming to Nigeria are market-seeking or export-driven. This finding is relevant to economic managers in the design and implementation of appropriate macroeconomic policies to attract FDI. It is also relevant to investigate whether FDI contributes to the overall capacity of developing economies to export. This study investigates the contribution of FDI to manufacturing export in Nigeria. Using firm level data collected from 232 manufacturing firms in Nigeria, probit regression analysis revealed that FDI does not significantly contribute to manufacturing exports in Nigeria. This finding supports that of Soderbom and Teal (2002) and Nunnenkamp (2002) that FDI in developing countries like Nigeria are not export-driven but are attracted by certain economic fundamentals within the economy like market size and the availability of natural resources.*

**KEYWORDS:** Foreign direct investment, manufacturing, export, Nigeria

**INTRODUCTION**

Results from empirical studies show that there are diverse, and often conflicting, reasons why foreign investors seek opportunities abroad. Some of these studies include the works of Dunning (1993), Globerman and Shapiro (1999), and Shapiro and Globerman (2001) among others. These studies conclude that multinational corporations' (MNCs) FDI are attracted by strong economic fundamentals in the host economies (Blomstrom and Kokko, 2003). The most important of these economic fundamentals are market size, and the level of real income, with skill levels in the host economy, the availability of infrastructure and other resources that facilitate efficient specialisation of production, trade policies, and political and macroeconomic instability as other major determinants. The import of these conclusions is that there are diverse factors that tend to influence the

decision of foreign investors to invest in a particular economy. These studies also show that some FDI are market-seeking since they are attracted by market size and the level of real income. There are still explanations to show that where domestic markets are not so attractive perhaps due to poor income distribution or because of low population density, then foreign investors might invest due to the attractiveness of some economic fundamentals with the objective to export.

This study investigates whether FDI in Nigeria's manufacturing sector is essentially market-seeking. If its contribution to export is significant, then we will conclude that foreign investors are not essentially attracted by the availability of domestic market in Nigeria, but also by the presence of some economic fundamentals which make production cheap and they invest to exploit these production opportunities then sell abroad. The work is presented in five sections. After this introduction is the literature review. That is followed by the explanation of the methodology employed in the study. In section four, the results of the study are presented. Section five concludes the paper.

## **LITERATURE REVIEW**

The beginning of capital investments in foreign countries is hard to trace to a specific period in history. However, international funds transfer, especially in the African continent, actually climaxed with the emergence and spread of MNCs. This is not, however, to assert that the global movement of FDI started with the phenomenon of multinational corporations. For most developing countries, the flow of FDI had started during the colonisation era when MNCs began to establish their subsidiaries in colonial territories. This flow has been rapid over the years. This view is supported by Lambo (1987:400) that, the growth of private foreign investment in the Third World has been extremely rapid. Available data show that cumulative foreign direct investment in Nigeria during the period 1970-1998, has maintained a persistent upward trend. It rose from N1.003 billion in 1970 to about N3.620 billion in 1980. By 1990, cumulative foreign direct investment in the economy was N10.436 billion, which rose to about N119.39 billion in 1995 (CBN, 1993, 1998). By 2000, net FDI inflow to Nigeria amounted to N115.952 billion (Dandi, 2009). By 2002, nominal FDI in Nigeria stood at N225 billion (Ayanwale, 2007). Thus, apart from a few declines noted in some years (mainly in the 1980s), there has been a persistent rise in net FDI inflow to Nigeria.

It is relevant to note that Nigeria is one of the largest recipients of FDI in Africa. For example, in the period 1993-1997, Nigeria topped all other African countries in the inflow of FDI with an annual average of 1, 503 million dollars for the period, far ahead of Egypt's 775 million dollars and South Africa's 755 million dollars for the same period (UNCTAD 1999; 50). This trend has continued into the 21<sup>st</sup> century. The UNCTAD World Investment Report 2006 shows that FDI inflow to

West Africa is mainly dominated by inflow to Nigeria, who received 70% of the sub-regional total and 11% of Africa's total. Out of this, Nigeria's oil sector alone received 90% of the FDI inflow (Dandi, 2009).

A review of theories on the flow of FDI across boundaries explains what opportunities foreign investors seek in recipient economies, and specifically in the sectors in which they invest. There are divergent views on the opportunities foreign investors seek to exploit in recipient economies. Whereas some theories explain that foreign investors seek investments abroad to enjoy absolute and comparative advantage in some countries, other theories explain that it is the extension of product life-cycle and the protection of monopoly that encourages firms to invest abroad (see the works of Vernon, 1966 and Teichova, 1989). Many other scholars have contested that in the 1990s most FDI is attracted by some economic fundamentals in the recipient country-market size, the level of real income, skill levels, trade policies, infrastructures etc (see the works of Dunning, 1993; Globerman and Shapiro, 1999; Shapiro and Globerman, 2001 and Blomstrom and Kokko, 2003). Newer theories suggest that at the beginning of the 21<sup>st</sup> century, investment incentives are the most potent motivations for inward FDI in most recipient countries (see Neven and Siotis, 1993; UNCTAD, 1995, 1996 and Blomstrom and Kokko, 2003). A number of studies have indicated that market size, natural resources and liberalisation policies have served to attract foreign investments to Nigeria despite political instability (see Dandi, 2009). Both Obadan (1982) and Asiedu (2002) and Asiedu (2006) who have studied the determinants of foreign direct investment into the Nigerian economy confirmed that market-size is the determining factor of FDI inflow into Nigeria. These studies agree with those theories which suggest that FDI is attracted by strong economic fundamentals (like market size) and those that suggest investment incentives as the major attraction to FDI.

Studies have shown that FDI could improve performance of both recipient firms and even of firms that compete with FDI firms. To cite some examples, Aitken and Harrison (1999) studying Venezuelan manufacturing firms observed that case studies present mixed evidence on the role of foreign investment in generating technology transfer to domestic firms. Mansfield and Romeo (1980) however, found that only a few of the multinationals in their survey helped domestic firms acquire new technology. Yauri (2006) found that FDI increases the employment of technology by domestic firms in Nigeria's manufacturing sector. There is also some evidence to suggest that the export performance of manufacturing firms in some countries has improved due to the inflow of FDI. Pain and Wakelin (1997) argue that the potential impact of FDI on recipient and investing economies is of considerable policy interest and that FDI could contribute to exports by improving the productivity of domestic enterprises. Blake and Pain (1994) have studied the UK export performance due to foreign direct investment. Their results suggested that net inward investment into the UK had a significant effect on export performance after

allowing for the impact of relative price and non-price factors. Rhee and Belot (1989) studying a group of low income countries found that the entry of several foreign firms led to the creation of a booming, domestically owned export industry for textiles. There are no similar results from empirical studies on the contribution of foreign direct investment to export in Nigeria, especially with respect to manufacturing exports.

## METHODOLOGY

The data utilised for analysis in this study was collected by the RPED Department of the World Bank in a survey research on Nigerian manufacturing firms conducted in 2001<sup>4</sup>. A team of World Bank specialists conducting a survey of Nigerian manufacturing firms have administered questionnaires and interview modules on a sample of 232 firms in the Nigerian manufacturing sector. This sample of 232 was drawn from 9 sub-sectors of the Nigerian manufacturing sector, specifically chemical/paints, food/beverages, metal, non-metal, paper/printing/publishing, pharmaceuticals, plastics, textiles and wood sub-sectors (see appendix I for identities of sectors as employed in the regression model).

Also, the sample firms were selected from the three major geographical regions and industrial axis of Nigeria namely, East (Region 1 in regression analysis), North (Region 2) and Lagos and South (Region 3). The Lagos and South region had the highest share of the sample with 125 firms, North 60 and East 47. Of the firms in the sample, 102 had FDI at the time of the survey (represented in the model as  $\beta_7 fdisurvey_{it}$ ), 130 are wholly owned by domestic entrepreneurs.

Gorg and Strobl (2002) similarly utilised the World Bank RPED Survey data for Ghanaian manufacturing firms for the period 1991-1997 in their study. Gorg and Strobl (2002) observed that the data set includes among other things, data on the level of output, total expenditures on wages, the replacement value of the capital stock, the level of value added, and the level of employment. More importantly, they noted that the data collection entails an intricate questionnaire on the background of the owner, or, in the case of a corporation, the chairman of the firm. Thus, the data sets reveal whether a firm is owned by foreigners through direct investment, a firm has received some amount of foreign investment or not at all. Specifically, according to Gorg and Strobl (2002) one is able to identify whether the owner/chairman has received any explicit training by foreign firms in the past, whether their immediate previous experience was working with a foreign firm within the same industry as the industry of their current firm or in some other industry, and whether they have had any previous same industry experience in general.



For the purpose of this study, the following hypothesis is formulated:

H<sub>1</sub>: FDI firms in Nigeria export a significantly higher proportion of their total output

To test this hypothesis, we needed data on the export performance of the manufacturing firms in the sample. Question *gen51* 0f the general questionnaire in the World Bank Survey of Nigerian manufacturing firms asked responding firms (both FDI and domestic firms) to indicate the percentage of their production that is directly exported. Thus, we generated a discrete parameter and we employed a probit regression to test the hypothesis. The probit regression model is expressed as follows:

$$gen51_{it} = \alpha + \beta_1 fdistartup_{it} + \beta_2 fdisurvey_{it} + \beta_3 firmage_{it} + \beta_4 sectorid_{it} + \beta_5 region_{it} + \beta_6 firmsize_{it}$$

*gen51<sub>it</sub>* = A dependent variable which is a proxy for percentage of firm *i*'s production that is exported at time *t*.

$\alpha$  = an intercept

$\beta_1 fdistartup_{it}$  = firm *i* that commenced business with FDI at time *t* (1 if firm with FDI, 0 if none)

$\beta_2 fdisurvey_{it}$  = firm *i* with FDI at the time of survey *t* (1 if firm with FDI, 0 if none)

$\beta_3 firmage_{it}$  = the age of firm *i* at the time of survey *t* (years)

$\beta_4 sectorid_{it}$  = the sector of firm *i* at the time of survey (1=food and beverages sector, 0=otherwise)

$\beta_5 region_{it}$  = the region where the firm *i* is located at time *t* (1=East, 0= otherwise)

$\beta_6 firmsize_{it}$  = the size of firm *i*, whether small-medium or large at time *t* (1 if large; 0 otherwise)


## RESULTS AND DISCUSSIONS

The results (see appendix II) indicate no significant relationship between FDI and export. In other words, less than a significant proportion of the output of FDI firms in Nigeria is exported to markets abroad. Both firms that commenced business with some foreign investments (*fdistartup*) and those that had FDI at the time of the World Bank Survey but which firms we cannot ascertain whether or not they started business with foreign investments (*fdisurvey*) did not possess high tendency to export. Thus, the hypothesis that FDI firms export a significant proportion of their total output is rejected. However, the results above show a positive but weak relationship between firm size and export, indicating that larger firms are slightly more likely to export than smaller firms. An interesting result is that firms in sector 8 (leather) have a higher tendency to export compared to firms in sector 1, and in all other sectors considered in the study. The findings above reveals,

first, that manufacturing in Nigeria is mainly of consumer goods and is targeted towards local consumption. Secondly, the findings show that FDI inflow in Nigeria is driven by the existence of a large consumer market. Thirdly, it confirms the traditional activities in the Nigerian leather sector which has historically remained an export commodity especially in the northern part of Nigeria.

The results are consistent with findings of other studies. Many studies have indicated that most FDI to third world countries is market-driven and is not likely to manifest export orientation. Nunnenkamp (2002) noted that in contrast to FDI in industrial countries, FDI in developing countries still is directed predominantly to accessing natural resources and national or regional markets. Majority of firms in the Nigerian manufacturing firms, therefore, produce for the local economy. Soderbom and Teal (2002) also found that a striking feature of Nigerian manufacturing firms is that not many of them export. Their survey of Nigerian manufacturing enterprises 2001 shows that only 7 percent of the sampled firms (about 176 of them) export. Excluding exporters to Africa, only 5 percent of firms export out of Africa. Thus, this study agrees with other empirical studies which have found that manufacturing firms in Nigeria produce largely for domestic consumption. In a Report on Nigerian manufacturing exports for the same period 2000-2001, Albaladejo (2003) found that manufactured exports plummeted from USD216 million in 1985 to USD88 million in 2000, making Nigeria one of the least export-oriented economies in the world.

## CONCLUSION

The findings from the test of hypothesis have shown that FDI firms in Nigeria's manufacturing sector are not export-driven. It is conclusive, therefore, that foreign investors in Nigeria's manufacturing sector are mainly attracted by the availability of domestic markets for their output. Other economic fundamentals like cheap labour and raw materials (though not investigated in this study) might have explained the flow of FDI into Nigeria's manufacturing sector. Because firms in the oil sector have not been included in the sample (as shown in appendix I), this study cannot conclude on the aggregate contribution of FDI to Nigeria's total exports. 

### Appendix I: Identity of Sectors of Firms in the RPED Survey

Sector identification	Name of sector
sector1	Food and beverages
sector2	Wood and furniture
sector4	Textile and garments
sector6	Metal

sector8	Paper/printing/publishing
sector9	Non-metal
sector12	Pharmaceuticals
sector13	Plastics

### Appendix II: Results of Regression Analysis

Independent variables	Dependent variable=export
	P >  z
<i>fdistartup</i>	0.1404
	1.3770
<i>fdisurvey</i>	0.9323
	1.4693
<i>firmage</i>	0.0691
	0.0682
<i>sector2</i>	8.2867
	7.9134
<i>sector4</i>	-1.8445
	1.9671
<i>sector6</i>	-1.1016
	1.5193
<i>sector7</i>	-2.0141
	3.0845
<i>sector8</i>	57.4995***
	17.9709
<i>sector9</i>	-1.9786
	1.6861
<i>sector11</i>	-0.8320
	1.6067
<i>sector12</i>	5.4128
	4.5697
<i>sector13</i>	1.6840
	3.1663
<i>Region2 (North)</i>	-5.6926
	4.3281
<i>Region3 (Lagos/South)</i>	-8.4287**
	4.2627
<i>firmsize</i>	5.2761*
	3.2252
F statistic	3.03***

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R squared	0.4284
Constant	5.2033

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\*, \*\*, \*\*\* significant at 10%, 5% and 1% level respectively

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#### **True Purpose**

The first necessity we face here is that of having to make a simple but vital distinction – one that is of crucial importance, not only for assuring sound technique and technology, but also for maintaining a sound civilization. We must learn to distinguish carefully between strictly technical purpose and what is ordinarily identified falsely with it, namely, personal motive.

For, technically, the purpose of a maker or a performer is to produce something that does well what it is meant to do – that answers the need properly which it is meant to answer; it is not primarily to make money and to assure the comfort, status and power that money can purchase.

Nothing could be more harmful to a culture – nothing, indeed, could more certainly degrade it into a commercialized, philistine distinction. For, once money, and therefore profit, becomes the primary objective of making or performing, the members of a culture become so obsessed by it that gradually, fatally, they begin to lose almost all sense of humane values. A product or service becomes something to be turned out with just enough quality to make it acceptable, but at as little cost and as high a sales price as possible; this, through the use of mechanical efficiency and niggardly cost accounting. It becomes interesting to the distributor as affording him a high percentage of rake-off, even it is designed to pander to wants created by advertising. And it becomes prized by its user on the basis of whether it enables him to make money or to enjoy what money can buy.

John Julian Ryan, *The Humanization of Man*, pg. 15

**ARTICLE****Global Challenges for SMEs in Sri Lanka and Pakistan in Comparative Perspectives****S.W.S.B. Dasanayaka**

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**ABSTRACT**

*The Small and Medium Scale Enterprises/Industries (SMEs) function as a lifeline in informal sectors of Pakistan and Sri Lanka due to their immense contribution in areas such as employment generation, exports, equitable income distribution, social stability, efficient domestic resources usage and regional development. However, a large number of SMEs in both countries are struggling to survive in today's global competitive market. Their sustainable growth is threatened by the impact and challenges of rapid globalization. Absence of any networking and cooperation among the SMEs and lack of linkages with large scale industries have aggravated these problems. In spite of the various policy reforms, establishment of SME related apex bodies, incentives and assistance offered by the national governments in both countries, SME sector has suffered in many fronts. The outcome of this paper is to identify coherent policies and strategies to develop SMEs to their full potentials both in Sri Lanka and Pakistan under this intense globalization move.*

**Key words:** Small and Medium scale industries: SMEs, competitive dynamics, development, globalization, technology, sickness, Pakistan and Sri Lanka.

**JEL Classification:** L, M and O

**INTRODUCTION**

The South Asian region is the cradle of small industry and the small businesses for centuries. The sub-continent especially has been the center stage of a civilization which has excelled in skills, craftsmanship and innovation. The craftsmanship passed on from one family or clan to another can be seen in metal working, precious metals and stones, jewellery, textiles, wood work, foot wear, leather work, embroidery, furniture and architecture. The craftsmanship became the focus of the early industrial development. It relied upon low mechanization but high manual workmanship and customization. With the advent of industrial revolution, mechanization in various degrees got introduced in production function. The economy of size became an important factor to the cost of the product and this became the first threat to the sector. The sector continued to thrive and grow as an important component of the economy because of its inherent strengths of high

entrepreneurship and a strong motivation to succeed. The government subsidies, reservations, controls and regulation provided it supports. Over the years the small scale sector has taken a new shape in the form of small and medium scale enterprises, SME. The definition of the small scale has undergone a revision several times in the last few decades in both countries (Dasanayaka.S, 2009a). Globalization and liberalization inducted in late eighties/early nineties brought in new challenges. In spite of the various policy reforms, incentives and assistance offered by successive governments in India, Pakistan and Sri Lanka, SME sector has suffered the most from many handicaps and problems. The growth and expansion of SMEs are constrained by problems relating to both product and factor markets.

In this context, this paper captures the challenges and their impact as faced by SMEs in this era of globalization. The study explores as to how the small scale industry can rise to its full potential in the changed economic scenario. It examines what steps could be necessary to position the sector in its rightful place. Specifically, the paper endeavors to seek response to such questions as:

- Q1: What constitutes the economic environment of globalization?
- Q2: What are the new challenges faced by SMEs in this era of globalization?
- Q3: How do the SMEs compare in the two countries?
- Q4: How is SME getting impacted by globalization?
- Q5: How should SME react and what measures should it adopt to meet the challenges?
- Q6: What steps should the governments in the two countries take to promote the sector?

The first part of this paper critically assesses the main problems and constraints encountered by SMEs in the face of challenges as posed by the dynamics of globalization.

The second part of this paper highlights and compares SMEs of the two countries on common criteria. The study focuses on manufacturing business that applies high end production technologies delineated from agricultural, fishery or handicraft business and is responsible for high value addition. The third part discusses positioning of the SMEs to meet the challenges of the globalization. The paper concludes with recommendations.

Words as ‘small industry’, ‘small sector’ SME as used in this paper should be understood as synonymous terminology.



## PART I

### GLOBALIZATION AND SMES

Globalization, together with liberalization of trade ushered by the new WTO regime has created a new business environment. There are new rules of business competition; customers have more choices of products and services and a paradigm shift has taken place on what counts as the success. In this section, it is first proposed to discuss what counts as globalization. Discussion on the challenges faced by an SME in the changed environment follows thereafter.

### GLOBALIZATION: THE ESSENCE

Generally globalization refers to the process by which the various nations in the world are increasingly being interconnected politically and economically through international trade, financial flows and migration, etc. The focus of globalization is on easing of regulatory practices as imposed by nations on international trade covering both the imports and the exports. Globalization has brought a paradigm shift in the business environment and the rules of business. The shift is visible from policy regulation to market orientation. Globalization can be studied under two perspectives, although both of these are interrelated:

*Trade liberation:* The new regime ushered in by WTO regulates multilateral trade and asks the signatories to remove various restrictions on imports. Generally WTO agreements underline two important principles (WTO, 2010):

- *Most favoured nation clause:* It encourages non discrimination amongst member countries. It calls for restricting governments from subsidizing, dumping or enforcing discriminatory licensing policies which may hurt business within the country or outside the country. All the member nations are to bring down the tariff rates to WTO stipulated limits, without any quantitative restrictions on imports.

These provisions ask the SME's to compete with local produce from manufacturers, large and small; secondly with high quality and technologically advanced products from developed economies and thirdly to compete with low priced products with acceptable quality from developing nations.

-*National treatment clause:* It implies that the member countries will consider equal treatment to imported and domestic good thereby prohibiting any preferential treatment for local firms. The state shall no longer extend protections in

the form of product reservations, licenses, restrictions on foreign companies for entry to local markets, subsidies etc.

*Internationalization of production, distribution and marketing:* This is the core perspective of globalization. An enterprise has access to both resources and the market beyond the national boundaries. This refers to opening of world economies unleashed: unleashing of world economies on one hand it is an opportunity to reach markets hitherto unexplored and reap the benefits, but simultaneously it also means facing the challenges of competition. The world trade has been protected through provisions of TRIPS (Trade Related Intellectual Property Rights), TRIMS (Trade Related Investment Measures) etc.

### **CHALLENGES AND IMPACT OF GLOBALIZATION**

Globalization has brought major changes in the working of an SME. There are both direct impacts as well as indirect influences. Major areas of impact are studied under this section

### **RISE OF MULTINATIONALS**

The intense competition has increased pressures on transnational corporations to reduce their number of suppliers with a view to bring down prices through benefits of large batch sizes. This has resulted in reduction of number of SMEs as suppliers to these organizations which constituted as the bulk of the customers.

There is a more serious larger dimension to the rise of multinationals. Bhavani (2006) argues that internationalization of production, distribution and marketing has given rise to global commodity chains that are the network of business units of different sizes involved in various stages of a product beginning from the supply of raw materials and components to production, marketing and retailing spread across the countries. Apparently organizations of these operations are massive in scale and investments. Small retailers, brand merchandizes and small plants cannot control these chains. As globalization expands, the chains will take over business controls of small plants. And dictate rules of operations.

### **CHANGES IN SOURCING BASE**

Bhavani.A (2006) says that the international chains can be producer driven or buyer driven. Producer driven chains exist for capital and technology- intensive products where the manufacturer of the final product is the key economic agent. As an SME unit is on weak grounds in technology it has only a limited role in producer-driven chains. In contrast buyer-driven chains exist for market-intensive products that are also labor-intensive. International chains will look for sources of such products or

services which match buyer's expectations in terms of price, quality and delivery. Low prices are generally associated with economies of scale, automation and specialist technologies of mass production areas. Globalization has reduced the range of products in the domain of SMEs as the small scale sector just cannot match the costs of production in a large set up based on mass production.

#### **CHANGE IN CONSUMER PROFILE**

The impact of globalization on customer taste and preferences is reflected in several dimensions. Globalization has brought a paradigm shift in expectations, aspirations and the social habits of consumers. Attachment to the domestic produce as a component of nationalistic fervor is getting diluted day by day.

#### **CHANGE IN CUSTOMER PREFERENCES**

A common code of culture encompassing dress, fast food, use of leisure, entertainment, travel habits, life style is fast developing across countries at the expense of local tastes, ethnic preferences and national habits. Revolution in information technology, the spread of the internet, the electronic media and easy expanding tourism traffic has made the customer well informed and knowledgeable about the availability of the products/services and their specifications across the national frontiers.

#### **EASY PROCUREMENT**

Fashion or innovation introduced in France or Germany travels fast and reaches consumers in no time. There is an immediate demand and an aspiration to be in the front line with other consumers. The global courier services, expanding airways network, simplified import procedures, removal of restrictive trade practices, E-Procurement and online orders have brought the product/services within the ambit of instant purchase by a customer.

#### **GROWING PURCHASING POWER**

There is a perceptible change in the purchasing power. Millions of high purchasing customers are being added every year in the developing economies. Pakistan and Sri Lanka along with other developing economies are the new centers of consumption. With increase in purchasing power, consumer goods, health care, education, travel, leisure vocations will be more in demand.

### **CUSTOMER IS THE KING**

It is for the first time that a customer is coming to be considered as a king in the emerging economies because he and Gives money to you. He has a choice. He can compare the prices, quality, delivery, flexibility and service as offered by various manufacturers. He asks for product differentiation, customized designs and innovative features.

### **LOCATION OF MANUFACTURING FACILITIES**

Economists recognize that different countries have different comparative strengths and weakness and the strengths form the backbone of industry. Pakistan and Sri Lanka have been known to possess advantages of low cost of labour. Besides this, economies have the advantages of availability of raw materials: steel, aluminum, cotton, leather, high quality fruits in Pakistan; gems and tea in Sri Lanka.

The two countries are also blessed with moderate climate, saving huge expenses to provide heating as is the practice in the advanced economies of the west. These comparative strengths have added to the survival and growth of the small industry. However, globalization has encouraged more and more firms to shift their manufacturing capacity from advanced industrialized countries to developing economies. These are often at the cost of the local small industry.

### **CHALLENGES OF TECHNOLOGY**

Technological change has emerged as the foremost component for competitive advantage. A firm possessing the latest technology and a capacity to bring about faster change in the application has competitive advantage. There are other developments in technological environment created by globalization for example product life cycles have been shortened. There is now less time between the introductions of the product to the stage of maturity. The development time, that is, the time taken to develop a technology to a marketable product, is reduced. Today there is a trend of decreasing payback period, that is a pressure to yield reasonably quick return on investments. These facts are recognized by the large sector which has increased its spending on R&D in recent years. Small industry, already handicapped, has no resources to compete on the research forum.

### **PARADIGM SHIFT IN NATIONAL PRIORITIES**

There is a virtual race in both countries to attract foreign investments, opening of the domestic markets to foreign produce and permitting entry of multinationals in areas such as retail trade, processed food which have been the traditional strongholds of small scale sector since centuries. On the other hand, no concrete steps are visible to

promoting the SMEs and their produce. The initiatives have resulted in high growth rate and rising GDP, but simultaneously the decline of SMEs have brought losses in employment, ever increasing disparities of income and regional imbalances. The unrest in specific geographical regions of the two countries can be traced to non existence of opportunities for jobs and development.

## PART II

This section makes a comparison of the state of affairs of SMEs in two countries. To make a fair evaluation it is necessary to choose the same categories and criteria. This task is further complicated in three ways. There is no common definition of an SME in the region. The situation is worse in Pakistan and Sri Lanka where several definitions are in vogue as followed by several institutions. Secondly, the definitions are based either on investments made in the fixed capital, turn over, or the number of persons employed. But these parameters are not justified. Lastly, the definitions have undergone frequent changes. As a result, the data available is fragile and not sufficient justified for analysis for a present day business environment. The author has chosen three categories for the comparison:

*Profile:* This lists the basics, including the numbers, growth and the contribution to the domestic economy.

*Business Development Support:* Govt. as well as non- government important agencies active in the promotion of SMEs are mentioned.

*Constraints:* Only such constraints which are largely specific to the country are discussed. Constraints common to two countries are discussed in a separate section.

## THE STATUS: SMES IN PAKISTAN

### PROFILE

Researchers such as Dasanayaka.S and Sardana.G (2008b, 2009b); Sardana.G and Dasanayaka.S (2007), and Dasanayaka.S (2008b) point out that Pakistan is a cradle of SMEs as more than 90% of industrial and business enterprises fall in this sector. It employs 80% of the non-agricultural labor force and contributes nearly 40% to the national GDP. The Small and Medium Enterprises Development Authority (SMEDA) of Pakistan pointed out 3.2 million business establishments exist in Pakistan and out of that 99% are SMEs which employ less than 99 persons. These establishments have employed more than 78% country's non-agricultural labour force. They contribute over 30% to GDP and account for 25% of manufacturing exports besides sharing 35% of value added manufacturing (SMEDA, 2007). The sports goods, leather work, carpet weaving, crafted wood work known for their

workmanship, creativity, innovations and attractive appearance have created a name all over the world. Pakistani economy has a high potential for growth with promotion and development of SMEs. However, in practice most of the government- led institutions established since early years of political independence to facilitate business promotion have been concentrating their efforts on large scale industry. SMEs in Pakistan are hindered by economic slumps, tax policies, law and order problems, general risk aversion of banks, institutional malpractices, political instability, unskilled labour, insufficient and low quality production, obsolete technology and lack of overall policy directions. Absence of a single SME definition makes it difficult to collect data and monitor the progress of SMEs over time.

Federal Bureau of Statistics (2000, 2003, 2004) shows that geographically 65 percent enterprises are located in Punjab, 18 percent in Sindh, 14 percent in NWFP and other 3 percent in Balochistan and Islamabad. In categories, 53 percent of enterprises are wholesale, retail, restaurants and hotels, 22 percent are community, social and personal services and 20 percent are in manufacturing. More than 96 percent of these establishments employ less than 5- employees. This holds good for region-wise distribution as well. Ownership-wise more than 96 percent enterprises belong to individuals and this picture holds good for regions as well. Age wise, more than 90 percent of SMEs are less than 20 years old and this picture is true for both rural and urban areas.

A large proportion of industries concentrate on a few categories: 43 percent industrial establishment are in textile, apparel and leather, 20 percent in food, beverage and tobacco, 10 percent in wood and wood products, 10 percent in metal and fabricated metal sector and 8 percent in handicrafts and related other activities. This shows Pakistan's heavy concentration in the textile, apparel and leather sector. Overall female labour participation is very low, at about 7 percent and of the same 3 percent is unpaid, as these are they are part of partnerships or/and self-employed family workshops. Fifty percent of total SMEs activity is concentrated in five sub-sectors; grain milling, cotton weaving, wood and furniture, metal products and art silk. Micro, Small and Medium Enterprises (MSMEs) contribute around 7 percent to the GDP, and 9 percent to agricultural GDP.

The high value adding engineering goods manufacturing in the SME sector constitutes a poor presence. The reasons lies in the absence of large manufacturing activity which could provide horizontal and vertical linkages which is why neither the SMEs have been successful in establishing any major exports. Pakistani SME, have largely confined to cottage and the micro industry where the manual traditional skills dominate (Dasanayaka.S and Sardana.G, 2009a).

## **BUSINESS DEVELOPMENT SUPPORT**

There are a large number of both government and non-government bodies active to support business development. SMEDA is the government apex body for development and promotion of SME sector in Pakistan. Apart from policy formulation and sector development strategies it aims at facilitation of business development for the SMEs. Resource Monitoring and Development Group (RMDG) and its partners are engaged in helping the Government of Pakistan to develop a more competitive and sustainable agri-business sub sector. The Mennonite Economic Development Agency (MEDA) and the Entrepreneurship Career Development Institute (ECDI) assist to develop local garment markets and distribution systems to reach rural, home-bound women. MEDA and ECDI are also participants in the United States Agency for International Development-funded (USAID) Small Enterprise Education and Promotion (SEEP) Practitioner Learning Program (PLP). These bodies focus on three promising sectors: garments, handicrafts, and ICT. Many of the rural, home-bound women, who produce the clothing, sell primarily at the low value, traditional, rural markets through intermediaries. Aga Khan Rural Support Program (AKRSP) encourages the development of markets in remote areas of northern Pakistan. AKRSP is a private, non-profit company, established in 1982 by the Aga Khan Foundation to help improve the quality of life for the villagers of the Northern Areas and Chitral in Pakistan.

It acts as a catalyst for rural development, organizing local human and financial resources in order to enable the communities to bring about their own development in an equitable and sustainable manner. AKRSP started the “Shubinak” project in the Chitral district, one of the poorest rural areas of Pakistan, to improve the economic base and livelihoods of the rural population – particularly women – by reviving the “shu” industry. Shu is an indigenous, handmade wool fabric, which women in Chitral have been making for centuries. Taraqee Foundation is a Non-Profit Government Organization (NGO) established in 1996 to alleviate poverty in Balochistan through gender sensitive, people centered approaches by providing a set of social and economic services. It has been active to support people in developing entrepreneurship. Kashf Foundation, Lachi Poverty Reduction Project, Akhuwat and many more similar NGOs promote sustainable rural livelihoods through the promotion of village based self help groups, which provide income generation activities through physical infrastructure projects, savings and credit programs and enterprise development. National Rural Support Program (NRSP) is a NGO working with the government in NWFP on community development, Community contribution and cost recovery. While Sarhad Rural Development corporation, a NGO is working with provincial government on training, saving and credit programs, Balochistan Rural Support Program, another NGO is working on training and credit programs.

## **CONSTRAINTS TO GROWTH OF PAKISTAN SMES**

There are very many binding constraints in Pakistan which limit the growth of SMEs. Some of the important constraints specific to Pakistan are discussed as under.

### **(a) Absence of sizeable large scale sector**

Pakistan lacks the existence of a large scale manufacturing sector. Current manufacturing model, as advanced by Toyota Manufacturing System and accepted all over the world calls for assembly lines to be supported by efficient supply chains and JIT systems in supply of parts sourced from SMEs. Automobiles, white goods, domestic consumables, fans, bicycles, project engineering are some products which come in this category. Pakistan lacks in this sector. Apparently, there is hardly an opportunity for SMEs to venture in engineering goods.

### **(b) Infrastructure Constraints**

Poor infrastructure, low quality of service, non-reliability, corruption in obtaining supplies, and politically influenced tariffs are the main anchors of the power constraint. Evidence depicts that Pakistan's state controlled and concentrated infrastructure is highly inefficient. The power transmission and distribution losses including power theft are reported to be the highest in Pakistan compared to other South Asian countries (World Bank, 2005). Similar inefficiencies are also characterized in Pakistan's road, sea, airports, railways system and the customs.

### **(c) Human Resource and Entrepreneurial Skill Constraints**

The overall quality of education and training offered in Pakistan is poor even in South Asian standards. Pakistan's literacy rate is low and to be specific, it is around 61.7% and 35.2% among the male and female respectively ([www.cia.gov](http://www.cia.gov)). Low educated and skilled workforce pose problems when it comes to transfer of product or process technology, a major requirement for the growth of the sector. SMEs inability to appropriate the returns on investment and enforce contracts deters investing in managerial and worker training. There is a significant mismatch in the skills required by employees and the training offered by institutions. Especially in Pakistan entrepreneurship culture does not exist and most of the educated youths are mainly job seekers rather than job creators. Therefore many initiatives have to be taken to create a true entrepreneurial culture in this country. Some of these initiatives can be promotion of entrepreneurship education at school and University level, training people to take risks for better gains, national and regional level business plan competitions, linking universities and industry, identifying and developing country's best brains as entrepreneurs, setting up of business and technology incubators,



welcoming foreign entrepreneur talents and expatriates under new immigration policy and incentive schemes, less regulated and more flexible labour market, promotion of venture capitalist and angel financing industry, etc.

## **THE STATUS: SMES IN SRI LANKA**

### **PROFILE**

Sri Lankan SMEs are engaged in a wide range of business activities in agriculture, mining, fisheries, industry/manufacturing, construction, tourism and services in rural, urban and estate settings by servicing local and international markets (Department of Census & Statistics 2006). Most Sri Lankan SMEs are one-person activity or are run by family individuals, usually relatives, friends or business partners. Most Sri Lankan SMEs in informal sector report very low productivity and income; therefore owners and workers are ‘working poors’ but SMEs in formal sector report very high productivity and efficiency and generate high income (Dasanayaka.S, 2007a, 2008a). In recent times, there is a growing emphasis on Micro, Cottage and Small Scale Enterprises as instruments to promote employment. Policy makers have stressed that micro, cottage and small enterprises instead of medium scale enterprises, should receive more government care and attention (Dasanayaka.S, 2007b).

Galagoda.S (2008) quotes World Bank that SMEs make up more than 80 percent of all businesses, account for about 35 per cent of employment and about 20 percent of total industrial value addition. Altogether 96 percent of industrial establishments are in SMEs but their contribution to value addition is not as high as compared to large scale enterprises and more importantly the contribution is decreasing over the years (Department of Census & Statistics 1984, 1997). Large scale establishments account for less than 4 percent of total establishments but their contribution to value addition is around 80 percent. Gamage.A (2009) refers that there are only 2 percent of large establishments in the category of manufacturing, but the same account for more than 50 percent of output. Dasanayaka.S (2007a) reports that geographically, small industries are concentrated in western districts of Colombo (10 percent) and Gampaha (13 percent) and North-Western district of Kurunagala (14 percent). While SMEs are not developed at all in Northern province of Jaffna, Mannar, Vavunia, Mulativu and Kilinochchi.

A large proportion of industries (80 percent) are concentrated in four groups of industries and these account for 80 percent of employment generation. These industry categories are: i) Food, beverage and tobacco products. ii) Textile, apparel and leather products. iii) Non-metallic mineral products iv) Mining. A general lack of dynamism and a stagnant nature in the form of non- diversification of SMEs has come to pervade over the years.

Dasanayaka.S (2009b) refers that Most of the SMEs have not succeeded to gain the advantages of economies of scale because business units operate in isolation with the inadequate total assets and management skills. Similarly, the study reports that SMEs have poor horizontal business linkages.

### **BUSINESS DEVELOPMENT SUPPORT**

Gamage.S (2003) and Dasanayaka.S (2009b, 2008b) traces the history of SME developments in Sri Lanka. It is only after 1977, that there has been an encouragement provided to the sector. Effective institutional support is mostly organized on product lines. Sri Lankan tea is recognized as the top quality tea at global level. This has been possible because of sincere dedicated efforts of a number of institutions. These include Tea Research Institute (TRI), Tea Small Holdings Development Authority, the National Institute of Plantation Management (NIPM), and Tea Planters Association. TRI helps the plantations in providing technological know-how to increase the yield and improve the quality. TRI also publishes Tea Bulletins and Information Memorandums on a regular basis to enlighten the industry on latest developments, pest and weed management guidance and new technological advances such as the field practices, clones etc. Formal training programs are conducted by NIPM adding to the accumulated knowledge available through work experiences. The NIPM offers a range of training courses available to all levels of staff of an estate, from the field workers to the estate managers.

Similarly, Sri Lankan gift and decorative were SME industry employs over 200,000 persons, is well organized and basis its success on innovative technology (Dasanayaka.S and Sardana.G, 2008). Some of the other prominent institutional support to the sector include:

Ceylon Institute of Scientific and Industrial Research contributes to the development and dissemination of appropriate technology. The Department of Rural Development and Cottage Industries is the main institution responsible for the cottage sector. Laksala has objectives to solve marketing problems of handicraft manufacturers. Industrial Development Board is the apex body established in 1956 with main objectives of promoting and developing SMEs in the industrial sector. Small Enterprise Development Division has primary objectives of encouraging self-employment, and Department of Textiles assists the cottage sector in development of new designs and better utilization of raw materials. The Peoples Bank, The Bank of Ceylon, Regional Rural Development Bank are established to provide credits and loans to the sector. Sri Lanka Business Development Centre and Sarvodaya Management Training Institute are important NGOs to provide facilities for training.

### **CONSTRAINTS TO GROWTH OF SRI LANKAN SMES**

- (a) Lack of organized large sector:

The situation is worse as contrasted to Pakistan. Large manufacturing corporations are just not there except garments. As a result there are no linkage opportunities available for the small sector. In garment sector forward and backward linkages are not in the country. Generally good linkages bring additional advantages of diffusion of industrial skills which encourage entrepreneurship. In case of Sri Lanka, this constraint is also responsible for lack of trained and skilled manpower for the manufacturing sector (Dasanayaka.S, 2007b).

- (b) Lack of Infrastructure and raw-materials:

In addition to serious bottle necks in infrastructure, Sri Lanka is deprived of oil and coal, the all important resources of power needed for industry. It has to depend entirely on imports thus pushing the cost of generation of power to one of the highest in the region. In similar context, the country has also no known deposits of minerals except few potassium deposits.

- (c) Civil strife and Governance related problems:

The nation has been in the midst of unfortunate civil strife for the last three decades. All the resources have been diverted to control the strife. This has resulted in virtual zero industrial development in a large area of the country. Even though this North and East problem is over many civil unrests and various types of governance related problems have emerged in Southern Sri Lanka.

### **CONSTRAINTS COMMON TO BOTH COUNTRIES**

#### **( a ) FINANCE RELATED CONSTRAINTS**

Dasanayaka.S (2007a,b) refers that major sicknesses of a small industry arise from inadequacy of working capital, delays in sanction and disbursal of working capital, gaps between sanction of term loan and working capital, and poor credit management. High interest rates and collaterals are the most cited issues. Most SMEs feel that they have discriminative treatments by the banking sector compared to services offered to large scale enterprises. There is a general indifference and lack of trust which the banks and the financial institutions carry in sanction of loans. SMEs often complain that large scale enterprises can easily access other credit instruments in capital market which SMEs are not allowed. Obtaining loans from traditional financial market is very difficult due to excessive paper work, and high collaterals due to high risk involved in SME finance. SMEs own characteristics such

as problems of proprietorship, poor resource base, non-existence of economies of scale and scope, etc. aggravate this situation. SMEs get their finance from very costly informal market and finally they get in to debt trap. The Small or micro enterprises (SE), in particular, including smallholders suffer from lack of collateral securities. Most banks prefer land as collateral but in most cases more than 80% land belongs to the government and the land owned by SMEs does not have clear deeds to bank them as collateral (Dasanayaka.S, 2008b). In addition, banks always insist on well prepared business plans and feasibility reports, where SMEs are handicapped. Most banks prefer to provide finances to urban based SMEs rather than rural based. Third finance related problem is the cost of finance. Lack of financial management experience and financial discipline, over ambitious business acceleration, lack of professionalism in business, non-separation of personal and enterprise expenditure, demonstration effects and unnecessary expenditure such as expensive imitative life style are some other reasons.

#### **(b) MARKETING RELATED CONSTRAINTS**

The small sector products are simply priced out by products from large manufacturers which are less costly as the result of economies of scales and scopes. A large undertaking has additional advantage of a brand, large budget for promotion and publicity, product positioning and geographical reach. Information on local preferences helps larger units to customize products to local tastes. Benefits of globalization have not reached the SMEs as the sector is just not aware of the demand, local preferences, sources of supply of raw materials, information on costs, market prices, and supply chains. In spite of large network of institutions created to promote the SMEs in all the three countries, there is hardly any worthwhile contribution reported in this direction. In most cases, export houses, large retail houses become the customers and exploit these SMEs. Workers and SMEs owners stay forever as working poor, making the export houses and the super malls/retail malls richer.

#### **(c) TECHNOLOGY RELATED CONSTRAINTS**

Technology refers to all aspects of product design, innovation, product development, processing technology, and engineering applications in storage, preservation, transportation and distribution. SMEs lack the resources to go for basic research or radical innovation. Besides there are problems even to source technology. Foremost problem lies in ignorance in identification of suitable technology, the importance of technology in product quality and productivity improvement, access to technology and sources of its availability. SMEs cannot opt technology, suitable for automation, or mass production. Therefore, the industry depends on technology resource from research establishments. None of the three countries can boast of real contribution in path breaking research, or development of new products. The universities, institutes

of higher learning, the management schools, universities and research laboratories have only an insufficient and limited interface with SMEs to render any assistance in these dimensions (Dasanayaka.S, 2007b). Pakistan and Sri Lanka ,both lack the infrastructure of scientific personnel and the research labs. It is a case of potential wasted India, produces globally the largest number of engineering graduates, management post- graduates and IT personnel every year. For more detailed studies on selected SMEs technology related problems in both countries see Dasanayaka.S and Sardana.G (2008b, 2009b).

#### **(d) MISPLACED NATIONAL PRIORITIES**

The politico-economic leadership in all the two countries recognizes the contribution of the small sector to the national objectives of generation of employment, reducing disparities of income and regional development. However, in practice all the national economic policies are skewed in favour of the transnational corporations and the large sector. This is reflected in the fiscal policies, the bank interest rates, advancement of loans, sanction of large projects, setting up of economic zones and concessions to attract foreign direct investments through major tax benefits as attractions. Assistance needed by the small scale is recognized in the form of easy and low interest credit, technology up-gradation, promotion of exports, easy rules on regulation, time bound sanctions. The policies formulated and the implementation lack in all these dimensions. The impact is evidenced in rising unemployment, increasing disparities in income and poor social development and civil unrest in both countries.

### **PART III**

#### **POSITIONING FOR THE CHALLENGES**

SME has its own limitations and inadequacies such as the smallness of size operations, structure and decision making, dependency on owner, inadequate management controls, unfavorable power balance, lack of product brand and shortage of funds. The inadequacies are now accentuated under new paradigm of competitiveness emerged under globalization.

#### **(a) HORIZONTAL AND VERTICAL ALLIANCES**

This type of cooperation can take various forms. SMEs join hands, become a member of network of firms and make a common offer to large customers as super malls/retail houses or for exports. In a vertical alliance the units gain through incorporation in global value chains. Large organizations and multinational corporations take necessary steps in such linkages to improve capabilities and technological know-how of their suppliers. Units situated in a cluster are another

type of an informal alliance where the units get access to skills and experiences. The cluster units support each other, improving productivity, quality and core competency. Over a span of time these units establish their own name, brand and customer acceptance. The clusters become a common address to large customers. The success story of Pakistan SME to a large extent is the success of such linkages with large organizations especially in the automobile, tractors, machine tools, project engineering and heavy electrical sectors.

#### **(b) ENHANCEMENT OF CHANGE CAPABILITIES: INNOVATION**

The rising income and the addition of new customers have opened up new vistas for the SME's. The increase in purchasing power has whetted the desire of consumers to ask for differentiated, unique, and customized products/services as against standardized products from large producers. These are the areas where SMEs, because of its competencies to deal with small batches, short production cycles, creativity, and ability to innovate at short intervals, excel and operate more efficiently. This is also the area where a customer is willing to pay more. The fashion products, apparel, foot wear, jewellery, cosmetics, decorative house fittings, furnishings, furniture, crockery, crafted products, table ware, gift items and more fall in this category. There is an enormous increase in demand of services. Generally SMEs have remarkable strengths in relationship management to provide products and services. SME is characterized by flexibility of operations, short cycles of production, low overheads, fast delivery and high responsiveness. These find immense need in operational environment of changed customer profile in areas of customized products and services. A SME needs to enhance its change capabilities and carry out frequent innovations in its product portfolio (Dasanayaka.S and Sardana.G, 2008a).

#### **(c) CREATION OF NICHE MARKETS**

A SME is not equipped for large scale production as well as distribution. It has an alternative of introducing even a standard product and compete with a large scale manufacturer on quality and service. The operation of marketing should get limited to nearby market thereby avoiding the costs of distribution.


#### **(d) GOVERNMENT AS A FACILITATOR**

No where in the world where SMEs have done well it has been possible to improve business support without institutional support. Sustainable SME development requires concerted efforts among all the concerned parties including financial institutions, consulting and training firms as well as local business associations. The role of the government in the process is vital but is limited to providing the enabling environment correcting potential market failures and creating a level playing field

that will allow SMEs to compete in free market. At the same time, business development services are needed to improve the internal capability of SMEs. Government efforts under this approach are directed towards; creating conducive business environment, facilitating SMEs access to markets, enhancing information flow, promoting entrepreneurial culture, facilitating development of services for new enterprise creation, education, and technology development (Dasanayaka.S, 2007b). To be specific, government has to be genuine to promote SMEs and needs to usher in policy reforms in providing updates on national and international markets, access to finance on rates lower than applicable to large firms, technological consultancy on product research and product development, training of manpower and performance orientation in transactions and specially finding overseas market through their diplomatic missions.

### **CONCLUSIONS**

The economic policy makers in both countries accept that the paramount importance of SMEs contribution for economic growth and development. Especially the only route to solve the burning problems of unemployment, poverty and regional disparity lies in the hands of SMEs. The leadership is indeed quite vocal when it comes to expressing its support to the promotion of the sector. There are compelling reasons for the leadership to promote this sector. The economic rationale for assisting SMEs lies in facts that these units often use domestic resources more efficiently than larger enterprises when market imperfections prevent them from maximizing the benefits of their efficiency advantages. SMEs are important contributors to pro-poor growth that the large scale enterprises cannot match. Furthermore, most SMEs are managed by their owners and therefore have a greater incentive to manage everything efficiently with more flexibility. An increase in the number of competitive SMEs should contribute to poverty alleviation. As the SME-sectors grow, competition for labour (especially skilled labour) can be expected to push up wage levels. Sometimes this may be start of losing comparative advantage of labour in one hand and other is wage level will increase to modern formal sector wage level on the other (Dasanayaka.S, 2009b). Ultimately the poor will benefit from improved availability of goods and services and access to markets. In terms of employment creation, medium sized firms will be in the best position to expand if business development services and credit can be made easier available. State initiatives in promoting the SMEs are therefore justified. There is an absence of a clear policy to promote the same. However, globalization has brought a paradigm change in the rules of competition. SMEs are now exposed to challenges from both the domestic and the imports. The units lack in knowledge of the markets, consumer preferences, technology developments. Formulation of national policies may be desirable for each sub sector of the SMEs. Organizing public hearing meetings with SMEs are necessary to understand SMEs needs and problems over the time. But in overall, two

countries should first understand the SME concept at ground level and their specific features before implementing policy initiatives for global challenges. 

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Knowledge workers will not be the majority in the knowledge society. But in many countries, if not most developed countries, they will be the largest single group in the population and the workforce. And even if outnumbered by other groups, knowledge workers will be the group that gives the emerging knowledge society its character, its leadership, its social profile. They may not be the ruling class of knowledge society, but they already are its leading class. And in their characteristic, their social position, their values, and their expectations, they differ fundamentally from any group in history that has ever occupied the leading, let alone the dominant, position.

Peter F. Drucker, *Managing in a Time of Great Change*,  
page 203.

**ARTICLE**

## **Role of Information and Communicational Technologies in Perceived Organizational Performance: An Empirical Evidence from Higher Education Sector of Pakistan**

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**ABSTRACT**

*This research study is an attempt to measure Impact of Information Communication Technology (ICT) on Organizational Productivity (Efficiency and Effectiveness); which leads to Organization Performance ( $\Delta$ Cost,  $\Delta$ Time, and  $\Delta$ Quality) using IRA Model. Study also explores barriers in ICT Adoption and impact of IT Literate Human Capital on Organizational Productivity. Sample for this research study has been chosen from Higher Educational Sector (HES) of Pakistan. These institutions are located at various geographic locations of Pakistan. Result shows significant relation of ICT adoption on the effectiveness, nonetheless ICT adoption is insignificant on efficiency; however the relationship between the two is positive. Research suggest that ICT adoption needs to be implemented with the intent of maximizing organizational outcome, in a manner that ICT fundamentally improves the Organizational Productivity of the firm, which, in turn will improve Organizational Performance.*

**KEYWORDS**

ICT Role and Adoption Model (IRA) Model, Organization Productivity, Organizational Performance, Higher Education Sector (HES), Information Communication Technology (ICT), Core Communicational Technologies (CCT), Enterprise Computational Technologies (ECT), Group Collaboration Technologies (GCT), Organizational Efficiency and Organizational Effectiveness.

**BACKGROUND AND RATIONALE OF STUDY**

The Organizations of developing countries including Pakistan shall take into account Information Technology (IT) integration with their organizational structures seriously like some of the growing economies including Malaysia. A research form banking sector of Malaysia proves that IT is being adopted and accepted by Managers (Selamat and Jaffar, 2011). One of latest research (Aziz et al, 2010) shows

that IT tools are being increasingly used in educational institutions of developed nations. In order to compete with industrialized countries in the same arena and face crucial challenge of survival, application of IT capital and new organizational structures are inevitable for third world countries. A great role that IT offers for firms in developing countries Gatautis (2008); instead the threat of downsizing policies (Foster and Heeks, 2010), they must ensure to make more of IT and labor complementarily in their organizations. It is also consistent with recent observed trends in the rapid adoption of Enterprise Resource Planning (ERP) systems (Tsai et al, 2010). IT is the current choice of many developing and developed countries to upgrade their economies and become competitive in the global market place (Shaukat et al, 2009). IT-based economies have streamlined the most complex economies of the world and enhanced the productivity to the level where developed economy has wriggled out of the entire trillion-plus dollars national deficit and turned into a surplus in recent years. To compete with the growing economies of the world, Pakistan needs to educate, train and bring its workforce to the international educational standards, incorporate new technologies and modern management practices into its industry, and bring intense focus on building an information-based economy by upgrading the technical and managerial skills of its people. Although Environment related factors often constrain the utilization of IT in developing countries such as Pakistan; nevertheless, research in Higher Education Sector (HES) of Pakistan (Shaikh, 2009) proves that ICT facilitates HESs of developing economies in narrowing global digital divide and thus producing knowledge-based societies which interns is improving quality of learning and educational outcomes. Computers and IT are basically used to transform the manual systems into automated systems; nonetheless, the pace of change of automation is slow in developing nations (Ahmed, 2006). The use of ICT is still limited to letter writing using word processing software (Ahmed et al, 2010) at most of Small and Medium Enterprises. Top line management is still stuck with the old trends of formal administrative practices and procedure (Gatautis, 2008) including the Higher Education Institutes themselves in developing Countries Shaikh (2009). Institutes are producing highly skilled and motivated IT professionals for the industries (Aziz et al, 2010) however institutes themselves are not getting full benefit (Shaukat et al, 2010; Saeed et al, 2010; Sultan, 2009). There is a great need of reformation of the managerial and administrative infrastructure of the academic institutions and the IT training of administrative personnel (Shaikh, 2009).

Why IT is not being adopted in HES of developing countries with the same pace as in many developed nations? There are many reasons behind this question. In fact, the people who are associated with these educational institutions and have worked throughout their lives in old legacy systems environment have not mentally accepted the advent of Information Technology.

As it has been identified by a research that older and non-experienced employees have more computer anxiety (Sultan, 2009). They feel that machines and computers are replacing them, and so they put their most efforts in trying to prove that Information Technology is failed in this country, rather than putting their efforts in optimizing their own performance. Misperception that IT causes unemployment can be cleared by idea presented by research of Shaukat et al (2010) which detected increase in IT related jobs in banking and manufacturing sector due to recent automation. Lastly, the survival and growth of organizations in an increasingly turbulent environment would depend upon effective utilization of ICT (Lucchetti and Sterlacchini, 2004) for aligning the organizational structure with environmental preferences and for creating symbiotic inter-organizational structures.

### **LITERATURE REVIEW**

Broad ranges of ICTs are being used in a variety of industries to improve Organizational Performance. To measure adoption impact of ICTs a definitional framework to distinguish among different types of ICTs that are typically used and being practiced. This definitional framework helps to relate various technology types to different kinds of improvement possible in organizational performance.

### **INFORMATION TECHNOLOGY**

Information technology (IT) includes all types of technologies used to create, store, exchange and use information in its various forms including business data, voice conversations, still images, motion pictures, multimedia presentations and any other forms, including those not yet conceived (Poku and Vlosky, 2002). Alternatively, William and Sawyar (2005) elaborate IT as technology which facilitates to produce, manipulate process, store, communicate, and disseminate information. A sample of 700 respondents proves that that are fourteen (14) different types of information technologies that are commonly used for project management in information work settings (Bardhan et al., 2007).

### **INFORMATION COMMUNICATION TECHNOLOGIES**

Information and Communication Technologies (ICTs) are modern instrumental tool that enables the educators to update the teaching methods (Mbaeze et al., 2010). ICTs are generally defined as information tool to create, process, transfer and share data (Saeed et al, 2010). For this research (Bardhan, 2005), basic independent variable is Information Communication Technologies (ICT), which is further subcategorized into three main groups including Core Communicational Technologies (CCT), Enterprise Computational Technologies (ECT) and Group Collaboration Technologies (GCT). CCT will include Email, Internet Search Engines, Mobile Communication; ECT will include Instant Messaging Software,

Video-Conferencing Technologies, Groupware and Online Blogs. GCT will include Enterprise Application Software, Knowledge Management Software, Customer Relationship Management Software, Project Management Software, Business Intelligence and Document Management Solutions.

### **ORGANIZATIONAL PRODUCTIVITY**

Productivity is a performance measure that includes efficiency and effectiveness (Robins et al, 2009). An organization will be productive, if it achieves its goals and does so by transferring inputs to outputs effectively and efficiency. Efficiency also refers to the degree to which an organization is able to more cost- and time-effectively (Bardhan, 2005). The scope of this research study will include operational productivity using ICT and perceived organizational performance. Bardhan et al (2007) suggests that, Firm productivity is usually a ratio of firms' outputs divided by inputs.

### **ORGANIZATIONAL PERFORMANCE**

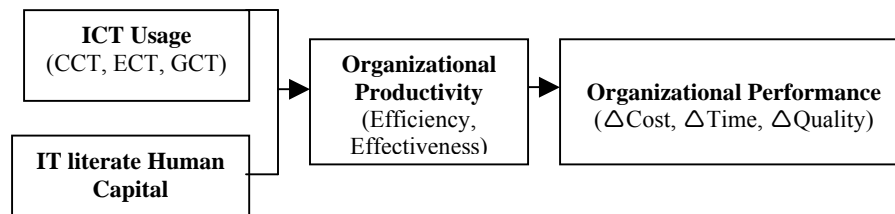
Organizational performance often dependent on managers' skill of converting knowledge into action, nevertheless, Knowledge and information are obviously crucial to performance (Pfeffer and Sutton, 2000) and IT tools are playing significant role (Lucchetti and Sterlacchini, 2004; Shaikh, 2009; Ahmed, 2010) for improved organizational performance (Shaukat and Zafarullah, 2010) in Pakistan and other developing countries including Malaysia (Selamat and Jaffar, 2011). Choi et al (2010) conclude that organizations can improve team members' meta-knowledge through IT financing, nevertheless sharing of knowledge alone is not enough, organization must ensure application of shared knowledge for improved group performance, which intern can improve the organizational performance (OP). Statistical evidence shows that Firms are using IT to improve organizational performance in Pakistan (Shaukat et al, 2009). In order to quantify the outcome of research, outcome has been subcategorized in term of perceived change in Cost, Time and Quality, i.e. to measure the effect of ICT adoption on OP.

### **IRA RESEARCH MODEL**

This research has developed an ICT Role and Adoption Model (IRA) Model, which provides distinction between Organizational effectiveness and Organizational efficiency while ICT is being adopted by the organization. IRA Model examines the impact of ICT Adoption on Organizational Productivity, which leads to Organizational Performance. In the model, the Dependent Variable is ICT which is further classified into CCT, ECT and GCT. The Independent Variable is Organizational Productivity (Efficiency, Effectiveness) and the Outcome variable of

research is measured as Organizational Performance ( $\Delta$ Cost,  $\Delta$ Time, and  $\Delta$ Quality).

**FIGURE 1: IRA MODEL**



### **THEORETICAL FRAME WORK OF IRA MODEL**

Broad range of variables can be used to identify and measure the Organizational Performance, Organizational Productivity and Informational Communication Technology.

### **RESEARCH HYPOTHESIS**

In this research work, there are following three main hypotheses in consideration.

- H1) Greater usage of ICT is associated with an improvement in perceived Organizational Productivity.
- H2) Improvements in Organizational Productivity is associated with Organizational Performance.
- H3) More the IT Literate Human Capital more will be Organizational Productivity (if ICT adopted).

Main hypothesis H1 can be further subdivided in two parts (H1A: Greater usage of ICT associated with an improvement in Organizational Effectiveness; H1B: Greater usage of ICT associated with an improvement in Organizational Efficiency). As there are three main subgroups of basic Independent Variable ICT (CCT; ECT; GCT). Consequently, research hypothesis H1A can be further stated in the parts (H1Ai: Greater CCT usage is associated with improvements in Organizational Effectiveness.; H1Aii: Greater ECT usage is associated with improvements in Organizational Effectiveness. H1Aiii: Greater GCT usage is associated with improvements in Organizational Effectiveness). The second part of main hypothesis H1B, thus can also be rewritten in subparts (H1Bi: Greater CCT usage is associated with improvements in Organizational Efficiency; H1Bii: Greater ECT usage is

associated with improvements in Organizational Efficiency; H1Biii: Greater GCT usage is associated with improvements in Organizational Efficiency).

The second hypothesis H2 of research model is significant in model (H2: Improvements in organizational productivity are associated with improvements in Organizational Performance). To quantify the research outcome, Organizational Performance is subcategorized into perceived change in Cost, Time and Quality which leads to three sub-hypothesis (H2A: Improvements in organizational productivity are associated with decrease in cost; H2B: Improvements in organizational productivity are associated with decrease in time to perform work or job done; H2C: Improvements in organizational productivity are associated with increase in Quality of work or job done). And above all hypotheses can further subcategorized (H2Ai: Improvements in organizational efficiency are associated with decrease in cost; H2Aii: Improvements in organizational effectiveness are associated with decrease in cost; H2Bi: Improvements in organizational efficiency are associated with decrease in time to perform work or job done; H2Bii: Improvements in organizational effectiveness are associated with decrease in time to perform work or job done; H2Ci: Improvements in organizational efficiency are associated with increase in Quality of work or job done; H2Cii: Improvements in organizational effectiveness are associated with increase in Quality of work or job done).

## DATA COLLECTION

Questionnaire is used as main data collection tool to measure the variables of interest. Target population consists of the computer professionals, administrative staff and faculty members of Higher Education Institutes from various geographic locations of Pakistan, including Islamabad, Lahore, Rawalpindi, Peshawar, Multan, DG Khan and Faisalabad and some other cities. 290 questionnaires were sent through mails and emails from those only 120 were returned with 41.3% response rate. 94 Questionnaires were filled properly, out which

Main Higher Education Institutes of Pakistan representing 90% of sample include University of ARID Agriculture (University Institute of Information Technology), Rawalpindi ,COMSATS Institute of Information Technology (Islamabad and Wah campuses),Muhammad Ali Jinnah University, Islamabad Campus, ZABIST Islamabad campus, AIR University Islamabad, Riphah School of Leadership, Bahria University Islamabad, Bahaduddin Zakariya University, Multan, Virtual University (Lahore, Rawalpindi, Peshawar, Islamabad and DG Khan Campuses), International Islamic University, Islamabad, Federal Urdu University, Islamabad, National University of Science and Technology, Punjab University Lahore, GC University ( Lahore , Faisalabad), University of Engineering and Technology Lahore, Peshawar University, University College of Education D.G.



Khan, and Allama Iqbal Open University. SPSS (Statistical Package for the Social Sciences) has been used and applied for various statistical tests necessary for the reliability of this research.

## FINDINGS AND EMPIRICAL RESULTS

### a) **ROLE OF ICT IN ORGANIZATIONAL PRODUCTIVITY**

Results revealed in Table1, prove that both CCT and GCT have a significant positive ( $r=0.246$ ) relation with the perceived effectiveness. The impact of ECT on organizational effectiveness is positive but is not statistically significant ( $r=0.108$ ), the reason might be that, these type of ICTs are not being adopted by organizations in Pakistani HES sector. Hence, the results support hypotheses H1Ai and H1Aiii, but do not fully support H1Aii. Inversely, results demonstrate that the ICT is very weak but positive relation with perceived Efficiency.

**Table 1**

Independent Variable	Dependent Variables	
	Effectiveness	Efficiency
CCT	.246(*)	.102
GCT	.224(*)	.050
ECT	.108	.107

\* Correlation is significant at the 0.05 level (2-tailed).

### b) **ORGANIZATIONAL PERFORMANCE AFTER ICT ADOPTION**

The impact of ICT on Organizational Performance is shown in Table2, which identifies impact of ICT adaptation on the Organizational Performance. Three variables outcome variables have been used to quantify the Organizational Performance (reduced cost, improved quality and better time). Results shows that adoption ICT has significantly contributed for better response time ( $r=0.362$ ), lesser cost ( $r=0.500$ ), and improved quality ( $r=0.430$ ) as for as perceived effectiveness is concerned. The efficiency of organization has also improved after adopting ICTs as better response time ( $r=0.254$ ), lesser cost ( $r=0.273$ ), and improved quality ( $r=0.464$ ) although this relation is weaker in comparison to effectiveness.

**Table 2**

	<b>Time</b>	<b>Cost</b>	<b>Quality</b>
Effectiveness	.362(**)	.500(**)	.430(**)
Efficiency	.254(*)	.273(*)	.464(**)

**c) ROLE OF IT LITERATE HUMAN CAPITAL ON ORGANIZATIONAL PRODUCTIVITY AND PERFORMANCE**

Impact of having *IT Literate Human Capital* in organization on perceived effectiveness is statistically strong and positive ( $r=0.417$ ), nonetheless same is not true for the *Efficiency* ( $r=0.120$ ).

**Table 3**

	Effectiveness	Efficiency
IT Literate HR Capital	.417(**)	.120

\*\* Correlation is significant at the 0.01 level (2-tailed).

**d) ROLE OF IT LITERATE HUMAN CAPITAL IN ORGANIZATIONAL PERFORMANCE**

On the other hand strong positive correlation between the Organizational Performance (reduced cost, better quality and improved response time) and IT Literate Human Capital has been identified as shown in Table 4.

**Table 4**

	<b>Time</b>	<b>Cost</b>	<b>Quality</b>
IT Literate HR capital	.359(**)	.381(**)	.318(**)

\*\* Correlation is significant at the 0.01 level (2-tailed).

**e) BARRIERS IN ICT ADOPTION**

To measure barriers while adopting ICT in the Higher Educational Institutions of Pakistan, opinion of respondents was taken on different barriers. Statistics identifies only two main barriers. a) Problem of pirated or unregistered versions of software as 38.29% organizations are either agrees or strongly agreed that in Pakistan original software is the main issue of concern. b) The second main barrier is ICT expenditure is higher than expected of organization as 37.23% organizations are either agreed or strongly agreed that in Pakistan organization cannot afford initial high cost of ICTs. Our Study results shows inverse finding if

compared with Sultan (2009) which proves that age and experience are the major significant correlates of computer anxiety as we find that top managers are basically interested in ICT adoption as 72.34% are either disagreed or strongly disagreed with first barrier in table 5. Nonetheless findings are somewhat consistent with Ahmed (2006).

**TABLE 5: BARRIERS IS ICT ADOPTION**

<b>Barriers</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
Top management is not interested	5.32%	8.51%	13.83%	35.11%	37.23%
Employees are unwilling to use ICT or Computer	6.38%	11.70%	10.64%	41.49%	29.79%
New versions of existing software are introduced too often / unavailable	5.32%	17.02%	25.53%	39.36%	11.70%
The level of ICT skills is too low among the employed personnel	9.57%	15.96%	17.02%	42.55%	14.89%
Difficult to find qualified ICT personnel or Computer Professionals	3.19%	12.77%	17.02%	42.55%	24.47%
No significant benefits for the enterprise to use ICT / Computer	0.00%	5.32%	20.21%	43.62%	30.85%
Risk of viruses or hackers accessing confidential company	6.38%	19.15%	23.40%	34.04%	17.02%
Technically too complicated	3.19%	10.64%	22.34%	39.36%	24.47%
Lack of perceived benefit from ICT Application or usage of Computer	5.32%	12.77%	25.53%	36.17%	20.21%
Problem of pirated or unregistered versions of software	9.57%	28.72%	22.34%	28.72%	10.64%

ICT expenditure higher than expected	9.57%	24.47%	28.72%	25.53%	11.70%
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## DISCUSSION, CONCLUSION AND FUTURE RESEARCH

Firstly, Research objectives included identification of ICT adoption acceptance role in Organizational Productivity, and Organizational Performance. Secondly, once ICT has adopted by organization, what role IT Literate Human Capital shall play in Organizational Productivity & Organizational Performance. Finally, research explores possible barriers if any in ICT Adoption.

Research suggests that ICT needs to be implemented with the intent of maximizing organizational outcome, in a manner that fundamentally improves the Organizational Productivity of the firm, which, in turn, will improve Organizational Performance. These findings are consistent with Selamat and Jaffar (2011) proving that shows that perceived usefulness, management support and external computing support are the most influential factors in determining microcomputer usage among bankers in Malaysia. ( $r^2=0.396$ ). In depth this study is partially consistent with Bardhan (2005) as correlation values of ECT ( $r=0.300$ ), GCT ( $r=0.05$ ) and CCT ( $r=0.23$ ) in relation to effectiveness are closely related.. Organizations will not realize significant performance improvements if ICT adoption is used to improve quantity of outputs and inputs, ignoring the effectiveness or quality of the outcomes. Effectiveness should be as much of a focus as efficiency, which has hitherto driven ICT investment decisions. Study findings amplify the need for firms to strengthen their organizational Productivity after making investments in Information Communication Technology these finding are consistent with Shaukat and Zafarullah (2010) who shows that Pakistani organizations are also adopting IT by making heavy investments in banking sector (23.34% of income), similar trend is required in HES sector of Pakistan. The study is also consistent with the finding or various studies regarding role of ICT adoption in improving organizational performance (Shaukat et al, 2009; Shaukat and Zafarullah, 2010).

This Research study has several limitations. First, the sample is taken from IT Literate staff and faculty and does include opinion form the staff of other disciplines of arts, basic, applied and pure sciences of institutes because of very less understandings of technologies and terms used in the research questionnaire. Secondly, the questionnaire might not be well understood by the lower level, less educated and remote areas staff members of the institutes, which may cause ambiguity in the findings. Thirdly, some of the institutes' management didn't cooperate to provide sample and simply refused to fill even one questionnaire, which may also cause variation on finding of the research. Fourthly, some of the employees were asking to pay per questionnaire, which was a valid demand to sacrifice time for

individual opinions but data was not collected from that population due to limitation of financial resources. Lastly, perceived change in Cost, Time and Quality has been measured, instead of actual ones. For example, one can use exact financial measures like Return on Asset, Return on Equity to measure Cost and similarly for Time and Quality which is recommended for future research. Future research can be conducted on different sector including Banking Telecommunication, Textile, Software Houses or pure IT industry and one can be presented sector-wise comparison of Impact of ICT Adaptation towards Organizational Productivity and performance.



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The possible cultural interpretation of the temporal focus of human life break easily, even on a common sense basis, into the three point range of Past, Present, and Future. Obviously all societies at all times must cope with all three time problems; all must have their conceptions of the Past, the Present and the Future. Where societies differ in the rank-order emphasis they give to each, and a very great deal can be told about the particular society being studied, much about the direction of change within it can be predicted, of one knows what that rank order is. Spengler, greatly impressed by the significance of the time orientation, made this statement in his Decline of the West: “It is by the meaning that it intuitively attaches to time that one culture is differentiated from another.”

Edward A. Tiryakia, Sociological theory, Values, and Sociocultural Change pg 223-224.

Perhaps it is too soon, perhaps it will always be too soon, to try to formulate an adequate definition of man. Perhaps the fact that he is indefinable by his own mind is an essential fact about him. But we might, at least, consider more frequently than we do those of his characteristics which we have got into the habit of thinking about very seldom. We might, to begin with, ask concerning the calculating machine those questions posed earlier, and then add some more. Is it capable, we might ask, of imagination? Does it have any curiosity? Can it sympathize with anything? Can it be happy or miserable? Was it even to laugh, or even to show, by any unwonted flickering in its tubes, that it considered something amusing? Does it – and this is most important of all – prefer one thing to another, or does it have its being in a universe where nothing has value, where all things are indifferent?

Joseph Wood Krutch, *The Measure of Man*, pg 169



**ARTICLE****Internal Debt and Private Investment:  
Evidence from Pakistan**

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**Muhammad Zahir Faridi and Shoukat Malik**  
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**ABSTRACT**

*In most of the developing countries financial sectors are characterized by limited availability of loanable funds. Public sector borrowing leads to crowding out of the private sector as well as high interest rates and inflation. In Pakistan, government has relied more on borrowing from the domestic sources as well. The study explores the impacts of internal debt on private investment in Pakistan applying the OLS technique for the period of 1972 to 2009. The study indicates that the stock of internal debt and debt servicing affects the private investment negatively in Pakistan. This implies that internal debt and internal debt servicing crowd out private investment in Pakistan due to shallow financial system and underdeveloped financial markets. The study also suggests some policies to retire the internal debt which includes the privatization of state owned enterprises, use of externally borrowed resources and the foreign exchange flows from external trade.*

**Key Words:** Internal Debt, Private Investment, Government Expenditures, Debt Servicing

**INTRODUCTION**

The South countries like Pakistan are facing a multitude of economic challenges at macro level. They want to achieve the targets of economic growth and social development with limited financial constraints. As the demand for exportable of these countries is dwindling due to low level of quality and quantity, they are unable to earn hefty amount of foreign capital. They have to hinge on internal sources to finance the expenditures.

International economic environment is also paying the way to rely more on internal sources due to global financial crises. Pakistan is also concentrating on internal capital flows i.e. internal borrowing. So, internal debt-creating flows have become an essential element of financing the internal and external gaps developing countries like Pakistan.

Investment is a prime macro economic variable which can contribute significantly in promoting economic growth especially in the context of developing

countries. The behavior of private investment activity has long been of interest to economists and policymakers. There is no consensus among the economists about the impact of internal debt on private investment.

A relatively well-developed financial intermediation system is vital for internal borrowing from the banking system excluding the central bank borrowing. It lessens inflation and risk of debt crises. Nevertheless, economic theory claims that the internal debt crowds out the private investment which impedes economic growth. The governments borrow internally and use private savings that can be utilized for private sector lending. So, due to smaller supply of loanable funds, interest rate (cost of capital) increases in the market which reduces private investment and capital formation.

There are also arguments that internal debt can enhance the economic growth because it depends on method by which internal debt is spent. If governments spend the borrowed money to improve the quality of life of the people by investing in health, education and infrastructure, the economy would be better off in real terms. Conversely the opposite is true.

The study tries to analyze the crowding out impact of internal debt in Pakistan. The study is arranged as follows. Various theories about internal debt and private investment are discussed in section II. A brief review of empirical studies is given in section III. In section IV, trends of internal debt in terms of various economic indicators are shown. The econometric specification is mentioned in section V. The discussion on empirical results is presented in section VI. Finally, the conclusions are presented in section VII.

## **THEORETICAL ISSUES**

There are various views about the effects of government expenditures and debt on private investment. The Neoclassical believe that individuals plan consumption over their entire life cycles. Budget deficits increase current consumption through shifting taxes to future generation. By assuming full employment, Neoclassical argue that increased consumption means a decrease in savings. Interest rates must go up for equilibrium in capital markets. High interest rates result in a decline in private investment. Consequently, budget deficits could crowd-out private investment. Aschauer (1989) analyses that higher public capital spending let the private investment down.

There are Keynesians who give a counter argument for the crowding out effect by the expansionary effects of budget deficits. The crux of the Keynesians approach is that the investors may lay claim to real resources in excess estimates of planned saving as capital accumulation generates new capacity and employment. Therefore,

an initial inflationary inclination may be offset by an increased supply potential and planned savings may get closer to forced savings again. They argue that usually budget deficits increase the internal production which makes private investors to become more optimistic about the future and invest more. This is known as the crowding in effect. Eisner (1989) concludes that deficits have not crowded out investment.

There is the Ricardian equivalence approach which states that a rise in budget deficits due to rise in government spending must be paid with the total present value of receipts fixed by the total present value of spending. So, a decrease in current taxes must be matched by rise in the future taxes leaving interest rates and private investment unchanged. A reduction in tax that substitutes debt-finance for tax-finance of unchanged government spending would leave consumer spending unchanged. If government consumption is increased and financed by debt, private consumption should decrease with each unit of money of higher permanent government spending.

It is a controversial topic in economics that public and private investments are substitutes or complements. Free markets advocates are against the government intervention in the economy and believe that public sector competes with private sector for scarce resources and drives their prices up. In particular, if public sector investment is financed by internal borrowing results in rise of cost of capital for the private sector therefore, private sector projects become unprofitable. The final result is the crowding out of private investment by public sector investment. On the other hand, it is argued that public investment may indeed be beneficial for the development of the private sector.

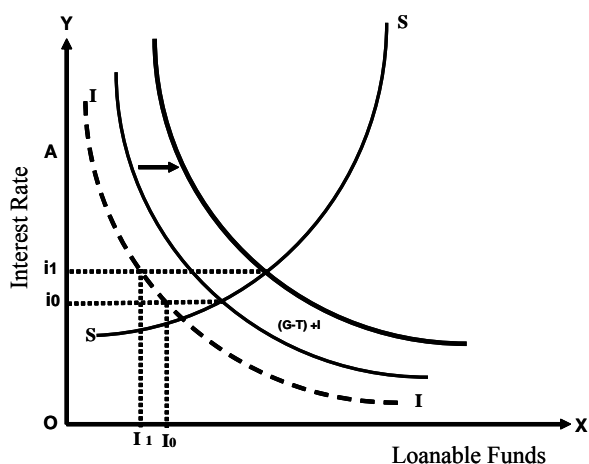
Crowding out effect can be elaborated by using national savings identity (NSI) with exemption of the foreign sector.

$$(G-T) = (S-I) \implies [(G-T) + I] = S$$

The left side from the equation 1 represents total demand for borrowing. It is comprised of two elements:

- 1) Government demand for loanable funds (G-T)
- 2) Private sector demand for loanable funds intended for investment (I).

On the right side of equation, the supply for loanable funds, i.e. national savings (S) are shown. We can express the crowding out effect by the figure 1. Equilibrium interest rate is determined at  $i_0$  where demand and supply of loanable funds are equal to each other. At this interest rate level, the private capital level is  $I_0$ . That represents private demand for loanable funds under existing interest rates of  $i_0$ .

**FIGURE 1: CROWDING OUT EFFECT**

Therefore, under increased government borrowing to finance deficit, the total demand for loanable funds curve moves to the right as shown in figure and interest rate rises. The higher interest rate lowers private demand for loanable funds and forming the private demand at level  $I_1$ . So, the massive government borrowing crowds out the private investment. The amount for which the private investment is crowded out is  $(I_0 - I_1)$ .

## REVIEW OF VARIOUS STUDIES

Various studies on the relationship of internal debt and private investment in context of developing countries are presented. We have included some important empirical studies of internal debt and private investment.

Christensen (2004) examines the role of internal debt markets for twenty seven Sub-Saharan African countries based on new data set over the period 1980-2000. Author also studies whether internal borrowing crowds out private sector lending. The study finds that internal debt markets in these countries are generally small, highly short term and have a narrow investor base. The study concludes that internal debt significantly crowds out private investment.

IMF (2005) discusses the impact of internal debt on private sector credit by taking forty low-income countries over the period 1993-2004 and finds limited evidence of government recourse to internal financing crowding out private sector borrowing.

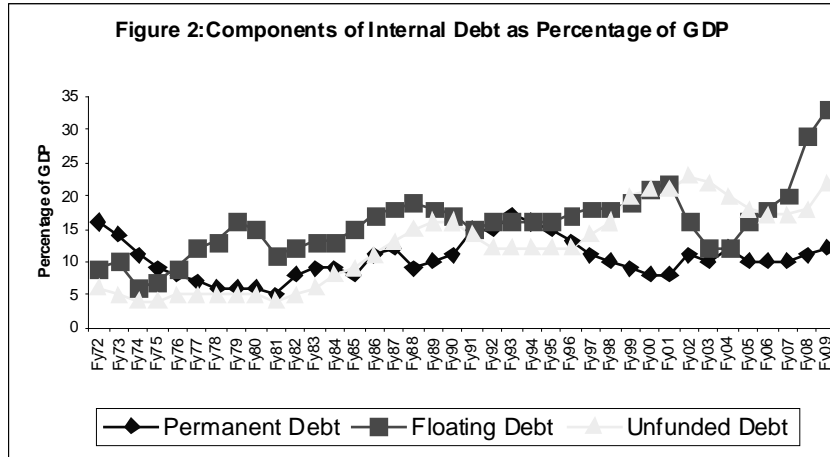
Maana *et al* (2008) analyze the economic impact of internal debt on Kenya's economy. Authors examine the impacts of internal debt on private sector lending by applying ordinary least square technique using annual data over the period 1996 to 2007. The study finds that internal debt do not crowd out private sector lending in Kenya during the period due to substantial level of financial development in Kenya. The study also examines the effects of internal debt on real output by using a modified Barro growth regression model. The results indicate that increase in internal debt has a positive but insignificant effect on economic growth. The study suggests that government should continue to execute wider reforms that promote investment in financial markets.

Khan and Gill (2009) investigate the crowding-out effect of external and internal public borrowing on private investment for Pakistan by applying unit root, co integration test and vector error correction model for time series data over 1971-2006. The results of study show no evidence of crowding out rather provides the evidence of crowding in effect.

The review of some assorted studies shows that the relationship between internal debt and crowding out of private investment is of mixed nature.

#### **TRENDS IN INTERNAL DEBT IN TERMS OF VARIOUS ECONOMIC INDICATORS**

In this section, we explain trends in internal debt in terms of various economic indicators. Figure 2 shows the components of internal debt as percentage of GDP. The permanent debt to GDP ratio has steadily declined from 16 % in 1972 to 9.0 % in 1985, before spiking again to 17 % during 1993. From 1994 to 2000 again declined to 8 percent, start increasing and reached to 12 percent in 2009. The declining trend was largely due to maturing market loans, Bearer National Fund Bonds and Federal Government Bonds. In particular, the total outstanding balance of these instruments has gone down. Maturing Federal Investment Bonds have also played a role in reducing the permanent debt to GDP ratio. However, the 2002 reversal of the declining trend is largely due to the introduction of the Pakistan Investment Bond. A major development in 2009 was the introduction of Ijara Sukuk Bonds within permanent debt. Although PIB maintained its main share in permanent debt compared to the previous couple of years.



The floating debt to GDP ratio has increased persistently reached maximum of 22 % in 2001, after this has decreased to 18 % in 2006 and again start to increase in 2009. The unfunded debt to GDP ratio has increased continuously from 1972 to 2002 largely due to higher profit rates relative to other government debt instruments. Figure 3 shows the trends in internal debt servicing in relation to GDP. It is noticeable from the trends that the interest payments on internal debt have remained the same till 1981. The averages of interest payment in 1970s, 1980s, 1990s and 2000 are 1%, 2.7%, 5.1% and 5.5% respectively. The average in 2000 is greater than the total period average, which is 5.5 percent. Due to structural adjustment programs, interest rates increased significantly per annum.

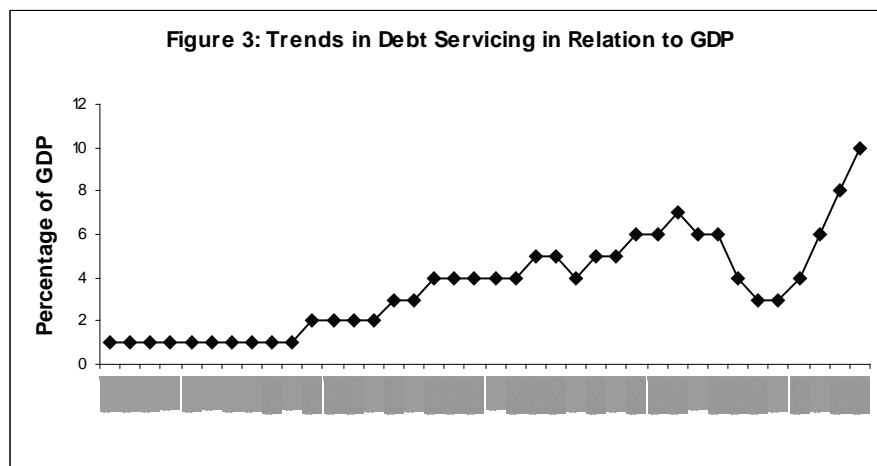
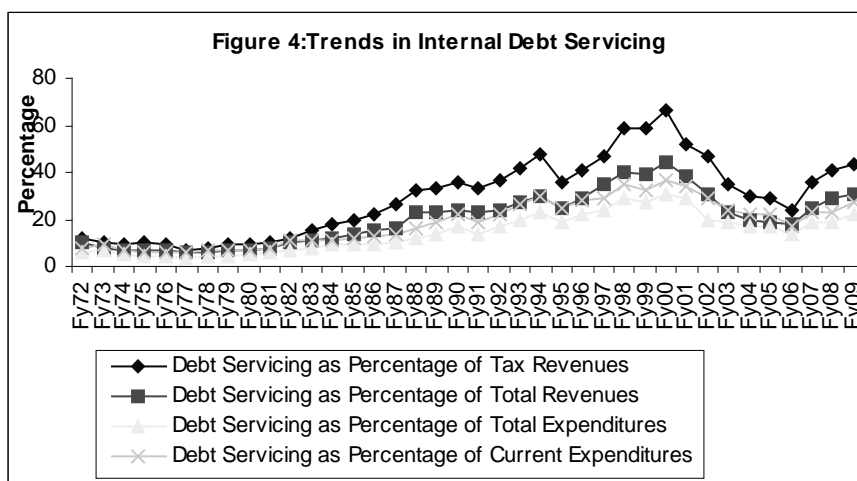


Figure 4 shows the trends in internal debt servicing in relation to major macroeconomic indicators. Interest payments on internal debt have used a major part of limited budgetary resources especially in 2000 which were 29 % of total expenditures. After this interest payments decreased to 22 % in 2009 but these are still a burden on budget. Interest payments on internal debt in relation to tax revenues were 66 % in 2000. After this period, the ratio has decreased sharply to 24 % in 2006 and increased again to 43 % after this period.



The rise in interest payments on internal debt is largely due to heavy interest payments on floating debt. However, higher interest rates on NSS instruments and a large debt stock implied that interest payment on unfunded debt comprised of the single largest component of total internal debt servicing. Trends of total revenues that are used to pay off the interest on internal debt are analogous to tax revenues. The share of interest expenditure on internal currency debt in current expenditures amounted to 37 % in 2000 and it decreases after this period.

**ECONOMETRIC SPECIFICATION**

In the light of above discussion, the following equations are specified in order to study the effects of internal debt or internal debt servicing on private investment. In these equations, we include internal debt or internal debt servicing alternatively as the independent variables. We construct the following mathematical models for analysis.

$$PI = f [GE, TDD, EX, PI [(-1)]] \text{ ----- (1)}$$

$$PI = f [GE, INT\_DD, EX, PI [(-1)]] \text{-----} (2)$$

The econometric equations specified in linear forms are given as follows:

$$PI = \alpha_1 + \alpha_2 GE + \alpha_3 TDD + \alpha_4 EX + \alpha_5 PI [(-1)] + \mu \text{-----} (3)$$

$$PI = \beta_1 + \beta_2 GE + \beta_3 INT\_DD + \beta_4 EX + \beta_5 PI [(-1)] + \mu \text{-----} (4)$$

$$\alpha_2, \alpha_4, \alpha_5, \beta_2, \beta_4, \beta_5 > 0$$

$$\alpha_3, \beta_3 < 0$$

Where:

PI = Private Investment

GE = Total Government Expenditures

INT\_DD = Internal Debt Servicing

EX = Exports

TDD = Total Internal Debt

PI [(-1)] = One Year Lagged Private Investment

$\mu$  = Error term

## RESULTS AND DISCUSSION

The equations 1 and 2 are mathematical models and equations 3 and 4 are econometric models. For the estimation of private investment function, we use annual data for the period 1971-72 to 2008-09. All the data are taken from various issues of *Annual Reports* of the SBP and *Economic Survey* of the Ministry of Finance, the government of Pakistan. In carrying out estimations, all the equations are estimated by the method of OLS. After the first round of estimation, regression errors in all the estimated equations are tested for autocorrelation with the help of Durban Watson (DW) test.

The results of estimation are arranged in Table 1. Two models specified in equation 3 and 4 are estimated. Both the models have five variables. Private investment is dependent variable, whereas government expenditures, exports, one year lagged value of private investment, total internal debt and internal debt servicing are independent variables. Now we discuss the value of individual regression coefficients in both equations.

The value of regression coefficient of government expenditures in equation 4 is 0.13 suggesting that an increase in one million government expenditures increase private investment by about 0.13 million. The effect is very minor and statistically insignificant. Similarly in equation 3 the value of regression coefficient of government expenditures is 0.24 which means one million rise in government expenditures increases the private investment to 0.24 million, although this effect is small but statistically significant. The reason of this positive relationship of government expenditures and private investment may be that both are complements. Government spending promotes the economic activity by assisting the private sector



through the provision of social overhead capital in the country. Alani (2006) explores that government expenditures crowd in private investment in Japan. Everhart and Sumlinski (2001) finds that public investment stimulates higher levels of private investment as both are complement. The public investment provides infrastructure and other sources of positive externalities which may decrease the cost of production for private investment. Government expenditures positively influence private investment by raising effective demand which can raise the profitability. In addition, government expenditures can crowd in private investment when it targets activities which have strong linkages with the rest of the economy (Tun Wai and Wong, 1982). Private investment in Pakistan is positively related by government expenditures (Sakar1993). The value of regression coefficient of exports in equation 4 is 0.26 indicating that if exports go up by one million, the private investment increases by about 0.26 million. Similarly value of regression coefficient of exports in equation 3 is 0.59 shows that if exports increase by one million, private investment goes up by about 0.59 million. Both values are positive and statistically significant. The possible reason of this positive relationship of exports and private investment may be that both are the components of aggregate demand so an increase in net exports will enhance output which results in rise in private investment according to accelerator principal. Balasubramanyam *et al* (1996) describe that the highly integrated economy attracts investment in tradable sectors in order to enhance productivity and competitiveness.

**TABLE 1: PARAMETERS ESTIMATES OF PI EQUATION  
(DEPENDENT VARIABLE IS PRIVATE INVESTMENT)**

Independent Variables	Equation 3	Equation 4
Intercept	-16960.41 (-1.386748)	-16581.62 (-1.286744)
Government Expenditures	0.246720 (1.723398**)	0.131203 (1.035762)
Total Internal debt	-0.219691 (-2.898643*)	-----
Debt servicing on Total Internal debt	-----	-0.695356 (-2.373330*)
Lagged value of Private Investment	0.742962 (5.411714*)	0.901965 (7.912190*)
Exports	0.590068 (5.035387*)	0.265769 (4.094994*)
R <sup>2</sup>	0.81	0.85
DW Statistic	2.14	2.18
Sample Size	37	37

*Note: The t-statistics (in parenthesis) significant at 5% and 10% levels are indicated by \* and \*\* respectively. All the estimations are carried out by Eviews.*

The values of regression coefficient of one year lagged values of private investment in both equations are positive and statistically significant, which shows private investment of previous year impacts on current year investment. To remove the problem of autocorrelation, we have used one year lagged values of dependent variable.


We now come to the main focus of our analysis that is the effects of internal debt or internal debt servicing on private investment. The value of regression coefficient of total internal debt in equation 3 is  $-0.21$  which demonstrates that one million increase in total internal debt decreases the private investment 0.21 million. Similarly, value of regression coefficient of internal debt servicing in equation 4 is  $-0.69$  suggesting that one million rise in internal debt servicing, decreases private investment to 0.69 million. So, in the investment functions the volume of internal debt and internal debt servicing has negative and significant effect on private investment efforts.

We observe that our specified models perform quite well in terms of overall explanatory powers of the models. The value of  $R^2$  is in the range of 0.81 and 0.85 respectively in both models. Thus, our models explain 83% of variation on average in private investment. In both estimated equations, the DW-statistic does not fall in the rejection range and lies within the acceptance range. Thus, we can accept the null hypothesis that autocorrelation is absent from the regression errors.

## **CONCLUSION**

The main objective of this paper was to study the crowding out impact of internal debt in Pakistan for the period 1972 to 2009. The study finds that internal debt and internal debt servicing crowd out private investment in Pakistan. Due to shallow financial system and underdeveloped financial markets in Pakistan internal debt crowds out private investment. The cost of internal debt increases rapidly along with increase in the debt stock particularly in shallow financial markets where financial resources are limited and extensions in internal debt will result in higher internal interest rates. The rise in interest rates reduces the private investment.

The cost of internal debt is more than the external debt and it is therefore expensive to maintain. So, it is need of time that the government formulates and implements debt reduction schemes for internal debt. Internal debt reduction could be achieved through the receipts from the privatization of state owned enterprises or

by the use of externally borrowed resources which are mostly on concessional terms. Further, the foreign exchange from external trade can be used to retire internal debt without injecting liquidity in the system. 

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If, as an individual, you really have some concern about the best way to change our present world to a better one, not a bad principle to follow is to identify the enemy. It should not be true, but unfortunately it is, that your immediate enemies remain as they have always been, your rulers – your government At all times, it is a wise thing to suspect both their intellectual honesty and their intelligence in economic matters. Nothing can be lost, everything can be gained, by doing so. Make them prove themselves in these reports – and be utterly ruthless in you judgement. When they see most plausible, in your particular interests, it is not a bad course to suspect their economic intelligence the most.

Harry Scherman: *The Promises Men live By* pg 480

**ARTICLE**

## **A Profile Analysis of the Customers of Islamic Banking in Khyber Pakhtunkhwa**

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Allama Iqbal Open University Islamabad, Pakistan

**ABSTRACT**

*Interviews conducted with the subscribers of Islamic banks in Khyber Pakhtunkhwa revealed their key characteristics and patterns. The study sample comprised 100 subscribers of Al-Meezan Bank and Bank of Khyber in N.W.F.P. A comprehensive profile analysis and a series of chi-square tests were conducted to elaborate the main attributes of the customers of Islamic banking system: the majority of Islamic bank customers are well educated; approximately 80 percent are between 25-50 years of age; more than 50 percent of the surveyed customers have maintained their current banking relationship with Islamic banks for more than one year; customers' awareness and usage rates are quite high for Murabaha financing, Mudaraba financing, investment accounts, customers were found to be most satisfied with the products/services they used most, with the Murabaha accounts receiving the highest satisfaction score; Islamic bank employees received the highest satisfaction score among the elements of the service delivery system; the single most important bank selection criteria were adherence to the Islamic principles.*

**INTRODUCTION**

One of the significant developments in the Muslim world during the last decade and half is the emergence of Islamic banking, which has appeared as a powerful movement. Although some attempts to reorganize banking activities along the Islamic lines go back to the early 1960's, the concept of Islamic banking is even older. In fact, the strong disapproval of interest by Islam and vital role of interest in the modern commercial banking system led Muslim thinkers to explore the ways and means to organize commercial banking on an interest free basis. However, for a long time, the idea of Islamic banking remained a mere wish.

The main mission of these banks has been the achievement of social and economic development through the delivery of financial services in line with the principles and teachings of Islam. To achieve their mission, it is imperative for Islamic banks to continue to study the changing behavior, attitude and perceptions of their customers especially in the retail sector, which constitutes the major portion of the banking business. This study is designed to identify the profile and banking habits of Islamic bank customers as well as their awareness, usage, perceived

importance and degree of satisfaction with the current products and services provided by Bank of Khyber and Al-Meezan bank operating in Peshawar N.W.F.P.

The Al-Meezan Bank is fully operating on Islamic Banking Conjunctions while the Bank of Khyber have established some branches for delivery of Islamic Banking services to its subscribers. They are the main providers of Islamic financial services to the residents of N.W.F.P. The combined total assets of these two banks was 35 Billion Rupees in December 2005. The study utilizes a questionnaire methodology designed to survey 100 customers of the two banks. A number of statistical tests along with a profile analysis are performed to evaluate the empirical findings emerging from this comprehensive survey.

This study is divided into five sections. Section one is an introduction to the study. Section two presents a detailed review of the relevant literature. Section three embraces the study methodology which includes a detailed description of the questionnaire, the sample, the procedure of data collection and an overview of the statistical tests used in the study. Section four presents the study findings. It begins with a profile analysis designed to identify the banking behavior of the Islamic bank customers as well as a discussion of the results of the statistical tests performed. Section five presents the main conclusions of the study. This section also includes a list of recommendations for improving the quality of products/services provided by Islamic banks

## **LITERATURE REVIEW**

### **CUSTOMER SATISFACTION**

Customer satisfaction is the feeling or attitude of a consumer toward a product/service after it has been used (Solomon, 1996; Wells and Prensky, 1996). A satisfied consumer will repeat the purchase of the product and convey positive messages about it to others (Dispensa, 1997). By contrast, a dissatisfied consumer is more likely to switch to an alternative product/ service the next time he/she recognizes the same need. Not only this, but also his/her dissatisfaction will be reflected in a negative word of mouth which might have a serious damaging effect on the business. Therefore, it is crucial that firms ensure customer satisfaction for their products/services. This has led to the increasing popularity of measuring customer satisfaction in recent years (Gulledge, 1996).

Banking is one of those industries in which consumer satisfaction has attracted the attention of many researchers (for example, Anderson et al., 1993; Bedall and Power, 1995; Brenhardt et al., 1994; Dispensa, 1997; Holliday, 1996; Wells and Prensky, 1996; White, 1994). One of the major reasons is that a fiercer

level of competition is becoming the most influential factor in determining the competitiveness of banks (Bartell, 1993; Haron et al., 1994).

Customer satisfaction is becoming so important to the extent that some banks consider it as a chief element in their marketing strategies. The term "aftermarketing" has been widely used to mean focusing attention and efforts on current customers in order to maximize their satisfaction so to secure their retention (Vavra, 1995).

The issue of customer retention has been the major concern of many banks. For example, Lloyds Bank (UK) conducted research to identify the process leading from customer satisfaction to account closure and to explore the determinant factors of dissatisfaction. The findings of the study helped Lloyds to design and implement a new customer retention process (Waterhouse and Morgan, 1994). Like Lloyds Bank, the National Bank of Middlebury (USA) also developed a quality service program based on customer retention through service quality. Similarly, the Royal Bank of Scotland uses customer satisfaction to help plot the course toward its vision for the future. The bank is concerned about profitable customer behavior in terms of the "3 Rs: remaining with the bank, referring the bank to friends, and repurchasing from the bank" (IJRDM, 1995b).

To satisfy customers, banks use various tools, ranging from reengineering all services to focusing on some specific services (Motley, 1994). One of the areas which is growing and believed to have a significant impact on customer satisfaction is telemarketing (Sion, 1994). White (1994) has examined the importance of telemarketing in satisfying customers and concluded that "telephone banking could become a key aspect of customer satisfaction". In Singapore banks are continually involved in improving the core technology that makes self-service banking products possible in order to achieve better marketing, customer satisfaction and retention (Kass, 1992). The Co-operative Bank in the UK has applied another strategy to satisfy its customers. The bank encouraged customers to communicate directly with its account management center, rather than contacting the branches, for any problem or complaint they might have. This strategy has helped Co-op to gain one of the highest customer satisfaction ratings (IJRDM, 1995a).

The above discussion highlights the importance of customer satisfaction which is thought to be the cornerstone in constructing strategies of banks. In this respect, it is essential for a present-day bank to switch from managing means to managing customers in order to satisfy them with the whole services they offer. Therefore, it is important for banks to have a system by which consumer satisfaction is continuously measured (Chakravarty et al., 1996; Chitwood, 1996; Morrall, 1996; Noe, 1996; Romano and Sanfillipo, 1996).

## **INFLUENCE OF QUALITY**

In the long run, the most important single factor affecting a business unit's performance is the quality of its products and services, relative to those of competitors ...Superior and improving quality is the most effective way for a business to grow. Quality leads to both market expansion and gains in market share (Buzzel and Gale, 1987).

In a service business, quality depends on the customer's experience with delivery because, unlike products, services are experienced while they are produced. Studies from the service literature emphasize the importance of quality perceptions and the relationship between service satisfaction and quality (e.g. Cronin and Taylor, 1992; Taylor et al., 1994). There is evidence to suggest that service quality leads to customer satisfaction and helps to keep existing customers and attract new ones (Keiser, 1993; Lian, 1994a, b). However, some banks go even beyond service quality. They suggest what they call "service excellence" (Mahoney, 1994). Masden (1993) defines service excellence as a field through which firms can delight their customers and exceed their expectations: "service excellence concentrates on listening, empowerment, innovation, and making customers and employees part of the action" (Masden, 1993). The realization of the importance of quality stimulated many manufacturing and service businesses to adopt programs such as TQM (total quality management) or CQI (continuous quality improvement) (James, 1989; Joseph, 1996).

## **INFLUENCE OF INTERNAL MARKETING (I.E. EMPLOYEES) ON SERVICE QUALITY**

Internal marketing has been defined as marketing the firm to its employees (Gronroos, 1982); in other words, attempting to motivate and satisfy employees through training, incentives, appreciation, and participation, etc. (Joseph, 1996; Kotler and Armstrong, 1991). The important role of bank employees in the quality of the services delivered is well documented in the literature (Bartell, 1993; Berry and Parasuraman, 1991; Bitner, 1990; Chitwood, 1996; Gronroos, 1982; Joseph, 1996; Kotler and Armstrong, 1991; Surprenant and Solomon, 1987). Internal marketing is important because the people who deliver services play special roles in satisfying customers, (Joseph, 1996). Several studies of service satisfaction have found that the interaction between customer and employee plays an important role in satisfying customers (e.g. Bitner, 1990; Surprenant and Solomon, 1987). This concept has also been applied to the banking industry. Several banks have realized that outside customer satisfaction must start from inside (i.e. employees) satisfaction. For example, Citizens Commercial Saving Bank of Flint, Michigan (USA), applied a strategy to make sure that the staff member responsible for a customer contact had the necessary tools and decision-making powers to properly service the customer



during the service contact (Stone, 1995). The “internal” satisfaction as a gateway to the external one has been emphasized by Gremler and others in their study of a large US bank (Gremler et al., 1995). All these studies indicate the importance of increasing employees’ skills through continuous training. Trained employees can positively contribute to the service quality which was found by many banks to be instrumental to customer satisfaction and retention (Lian, 1994a,b).

### **BANK SELECTION CRITERIA**

Bank selection criteria have been heavily investigated over the past two decades (Anderson et al., 1976; Evans, 1979; Haron et al., 1994; Hegazy, 1995; Kaynak and Yavas, 1985; Khazeh and Decker, 1992; Laroche et al., 1986; Ross, 1989). In most of these studies, questionnaire methodology was employed to evaluate the relative importance of specific selection attributes. Several attributes were found to play a crucial role in the process of bank selection. Those attributes include: availability of credit, relatives’ advice and recommendations, friends’ advice and recommendation, convenient location, variety of bank services, the quality of services, availability of ATM, adequate bank hours, return on investment, friendliness of personnel, understanding financial needs, and bank name. The relative importance of each of those attributes differs from one market to another depending on: the type of institution (Islamic bank or commercial bank), the customers’ level of education, age, income and occupation.

Given the special nature of Islamic banking which differentiates it from commercial banking, it is expected that some of the above selection attributes that have been found to be crucial in the selection of commercial banking, may not play the same role in the selection of Islamic banks. Hegazy (1995) has investigated bank selection criteria for both Islamic banks and commercial banks. He concluded that the selection attributes for Islamic banks are different from those for commercial banks. For the selection of Islamic banks, it was found that the most important factor was the religious inclination of the subscribers rather than the convenience of location, friendliness of personnel, the expected profitability, timeliness and efficiency.

Identifying the main selection attributes will allow Islamic banks to develop appropriate marketing strategies. Since Islamic banks operate according to profit-loss sharing principles (prohibition of interest), they are expected to develop this competitive advantage around those crucial selection attributes emerging from comprehensive customer surveys.

## **THE METHODOLOGY**

The methodology employed in this study include: the procedure for data collection, the study sample, the procedure and techniques used in the data analysis, and the study limitations. A brief description of each of these elements is presented in this section.

### **DATA COLLECTION**

The data required for conducting this study were collected using self-administered questionnaires, specially designed to achieve the study goals as outlined in section one. A total of 14 questions covering 14 key attributes of the customers' banking behavior were prepared after reviewing the relevant literature on the subject, as well as consulting key officials in the two selected banks. Thirteen of the 14 questions were closed-ended questions to encourage easy response from the customers and to allow the researchers to use statistical tests in evaluating the empirical findings of the study.

A pilot study of 15 questionnaires (about five per cent of the total sample size) was conducted to check the validity and logic of the questions included in the questionnaire. After reviewing the feedback from the pilot study, several key amendments were made before the distribution of the questionnaire.

The questionnaires were hand distributed to the account holders in the two selected banks. As the two banks have branches, the questionnaires were distributed in all the branches to seek wider representation of bank customers. This process of data collection continued for four months, from September 2006 to December 2006. Respondents were selected from among customers visiting the sampling locations during the chosen time intervals, in order to eliminate the sampling frame errors and to ensure the representation of the population under study in the sample units. Although 150 questionnaires were distributed, the actual sample size (i.e. usable returned and completed questionnaires) was 100 customers (50 from the Al-Meezan Islamic Bank and 50 from the Bank of Khyber). Those usable questionnaires were either returned to the bank official designated to collect them, or to the researchers' mail address.

### **THE PROCEDURE OF DATA ANALYSIS**

Two types of analysis were conducted in this study: profile analysis and statistical analysis.

Profile analysis can be viewed as a means of classifying a particular set of subjects according to a particular number of relevant attributes. This method is

widely used in social science research especially those studies that involve the investigation of behavioral issues. This method of analysis has been used in many studies as a first step before conducting any statistical analysis.

The profile analysis employed in this study was conducted via the use of percentages, mean scores and ranks. The results of the analysis are presented in Tables I-VII in section 4 of this paper.

In addition to the profile analysis, a non-parametric statistical test was also employed in this study. The selected chi-square test which has been widely used in the literature was adopted in this study for two reasons: first, its suitability to the nature of the data collected, as most of the data are nominal type; second, the application of the technique does not require those restrictive assumptions that are normally associated with most parametric statistical tests.

#### **STUDY LIMITATIONS**

There are two main limitations to this research. First, there were only two Islamic banks whose customers participated in this study – Al-Meezan Islamic Bank and Bank of Khyber. As a result, the generalization of the findings of this research should be considered carefully. The second limitation concerns the nature of the measures used. The measures included in this research were all based upon the perceptions of the participating customers. Therefore, the potential for data inaccuracies due to item misinterpretation or predisposition to certain responses on the part of the participant does exist.

#### **FINDINGS**

Islamic banks currently face various types of competitive pressures from both the traditional commercial banks and other Islamic banks and Islamic investment companies. The scope of this competition has grown in recent years to include every market, product or service. In this highly competitive environment, Islamic banks need to formulate and implement successful marketing plans in which a key ingredient is a clear understanding of the behavior, attitudes and perceptions of their customers. This mission can best be achieved through identifying a complete profile of Islamic bank customers which includes: their banking habits, their selection criteria, their awareness and usage of the various Islamic bank products/services, their degree of satisfaction with those products/services and their delivery systems.

#### **CUSTOMER PROFILE**

The success of Islamic banks in formulating effective marketing plans largely depends on maintaining an up-to-date complete profile information on their

customers. This includes customer age, income, educational level, nationality, and other socio-demographic information. The availability of such a comprehensive profile provides the bank management with a solid basis for making plausible and effective decisions regarding the marketing of their products and services.

**Table I** presents a comprehensive profile of the Islamic bank customers participating in this study.

The results reported in **Table I** show that the majority of Islamic bank customers are well educated, with more than 40 per cent holding secondary school certificate and about 50 per cent holding a bachelor degree or above. These findings indicate that Islamic banking in N.W.F.P is predominantly the habit of well-educated persons. Those findings provide Islamic bank managers with valuable inputs for formulating their marketing strategy. More sophisticated products/services can be offered as they can be easily handled by those well-educated customers. However, the emphasis on the products/services to the well-educated customers should not lead Islamic bank management to underestimate the need to develop certain types of products/services that can attract less-educated customers in their efforts to expand their customer base.

In addition, the results reported in **Table I** show that approximately 42 per cent of Islamic bank customers earn less than Rs.20000 per month which represents a sizable population of the province. As a result, management personnel in Islamic banks need to provide the range of products and services that suit the needs of the customers in these income groups. A detailed study of the spending behavior of the customers in this group can provide Islamic banks with highly useful information that can be used in the development of the appropriate products/services to those customers.

The results also show that about 25 per cent of the surveyed customers earn between Rs. 20000 and Rs. 25000 per month and 15.9 per cent of them earn between Rs. 25000 and Rs. 30000 per month. Combined together, the customers in those two income groups represent approximately 40 per cent of the total sample.

Furthermore, the results presented in show that nearly 80 per cent of Islamic bank customers fall in the range 25-50 years of age.

## **HISTORY OF BANKING RELATIONSHIPS**

**Table II** presents a historical perspective on the banking relationships for the surveyed customers.

The data in panel A of **Table II**, show that 76 per cent of the surveyed customers have had a previous banking relationship with traditional banks prior to their current relationship with their selected Islamic bank. Although those customers might be aware of the different philosophies of the two banking systems (i.e. traditional banking system and Islamic banking system), it is expected that their previous banking experiences are likely to influence their attitudes and perceptions and degree of satisfaction with the current products/services offered by Islamic banks.

The results in **Table II** also show that 54 per cent of the surveyed customers have maintained a banking relationship with Islamic banks for more than one year and 18.5 per cent of them have maintained such a relationship for a period less than a year. These results show that there is a relatively high degree of stability of those customers' relationships with Islamic banks. This suggests that their attitudes, behavior and degree of satisfaction with Islamic bank services will be of significant importance to the Islamic bank management.

More specifically, the results indicate that there is a relatively high degree of permanence in the Islamic bank customer base which allows Islamic bank management to implement various long-term banking activities, such as long financing schemes, long-term savings programs, and launching long-term advertising campaigns necessary to achieve a higher rate of growth.

#### **AWARENESS AND USAGE OF ISLAMIC BANK PRODUCTS AND SERVICES**

The awareness and usage of ten products/ services offered by Islamic banks were surveyed and the empirical results are shown in **Table III**. The results presented in indicate that the awareness percentage is quite high for three basic deposit schemes – Murabaha Financing (88.1 per cent), Modaraba Financing (94.4 per cent) and investment accounts (85 per cent). However, the above results show that a significant portion of bank customers - around 30 per cent - are not aware of the Islamic financing schemes and almost two-thirds of the surveyed customers do not use these facilities.

Around half of the surveyed customers are not aware of money orders/drafts, or traveler cheques offered by Islamic banks. Given the considerable number of residents travelling and transferring money abroad every year, these percentages of customer awareness of those two products/services appear to be relatively low. This problem becomes more evident as we consider the very low percentages of customer usage of those two services, 13.3 per cent and 8.9 per cent respectively. This problem could be partially attributed to the widespread popularity

of money exchange companies and other informal channels of transfer used by the bank customers in N.W.F.P.

Some products and services such as foreign trade facilities, letters of credit and specially ordered bank statements have received low usage scores. However, given the fact that these products/services are not frequently used by the majority of bank customers (conventional banks or Islamic banks) it seems that the percentage usage of these products/services, as reported in, is in line with percentage usage of these services in other countries.

Finally, one-half of the surveyed customers are not aware of the “specially ordered bank statement” service, and only one-fifth of the customers use this service. Given the importance of this service, Islamic banks need to promote it more effectively. In general, the empirical findings regarding the awareness - usage patterns of Islamic bank products/services confirm that the usage rate is well below the awareness level for most of the products/services investigated in this study.

#### **THE RELATIONSHIP BETWEEN SOCIO-DEMOGRAPHIC FACTORS AND THE CUSTOMER USAGE OF ISLAMIC BANK PRODUCTS / SERVICES**

To enrich the findings reported above, a number of chi-square tests were conducted to examine the relationship between some major socio-demographic factors and the usage of Islamic bank products/services. The outcome of these tests is reported in **Table IV**.

The results in indicate that there is a significant relationship between customer age and the usage of “current accounts”. A closer examination of customer responses revealed that this product is relatively more popular among the older customers, 35-50 and above 50 years. About 75 per cent of the respondents in those two age groups have claimed that they use this product. However, only 35 per cent of the customers in the first age group (below 25 years) have indicated that they maintain a current account with their Islamic banks.

Finally, the  $X^2$  results in indicate that there are no observed patterns of relationships between customers’ ages and the other products/services included in this study. These findings suggest that the various other products/services provided by Islamic banks, including the highly popular “Modaraba Financing”, appear to be used by many customers across the various age groups.

The results presented in indicate that there is a significant relationship between the level of education and the usage of the Murabaha and Mudaraba

Financing as indicated by the significant  $X^2$  values of 13.5 and 11.11 respectively. The frequency distribution for those two products/services reveals that these two products are more popular among the well-educated customers. These findings have far-reaching implications for formulating Islamic banks advertising strategies in general and the media selection in particular.

#### **THE RELATIONSHIP BETWEEN THE NUMBER OF YEARS WITH ISLAMIC BANKING EXPERIENCE AND AWARENESS OF THE AVAILABILITY OF DIFFERENT BANKING SERVICES**

A chi-square test of independence indicated that there is a significant relationship between the number of years of Islamic banking relationship and the awareness of the availability of various banking services. These findings suggest that the greater the number of years for Islamic banking relationship the higher the degree of awareness of various banking services offered by the bank. Successful marketing strategies suggest that Islamic banks need to have adequate advertising and promotion activities which will allow their customers to have adequate information about the various services offered by the bank. Those activities, if properly conducted, can speed up the customers' learning about the various bank services - as those customers normally represent potential users of the various services offered by the Islamic banks.

#### **CUSTOMER SATISFACTION WITH ISLAMIC BANK PRODUCTS / SERVICES**

In the highly competitive market for bank products/services, Islamic banks are left with no option but to apply the marketing concept. More specifically, Islamic banks need to be customer-oriented institutions. They should deliver what their customers need. To achieve these goals, it is necessary to obtain in-depth information on the customers' levels of satisfaction with the bank products/services offered. The degree of satisfaction was measured using a five-point Likert type scale ranging from very unsatisfied (1) to very satisfied (5).

**Table V** summarizes the study findings regarding the degree of satisfaction with ten banking products/services offered by Islamic banks in N.W.F.P. It should be noted that customers would indicate their degree of satisfaction with a particular product or service only if they are using the product or the service. The mean satisfaction score for each of the products/services, as well as its respective rank, are presented in.

Based on the mean satisfaction scores presented in **Table V**, and usage rates presented earlier in, it can be noticed that Islamic bank customers in N.W.F.P. are most satisfied with those products/services they use most.

The results reported in **Table V** show that Islamic bank customers are not quite satisfied with the “financing facilities” as indicated by the low mean satisfaction score of 1.83. Informal interviews conducted with some of the surveyed customers indicate some concerns about the cost and flexibility of these financing schemes. “Money orders/drafts” and “traveler cheques” also received relatively low mean satisfaction scores of 1.79 and 1.70 respectively.

In response to the low customer satisfaction with several key Islamic banking products/services (as reported in), Islamic banks need to undertake concrete steps to improve the quality of their products/services. Those steps may include: controlling their costs more efficiently in order to decrease the cost of their financing schemes; simplifying their procedures especially those associated with the various types of financing schemes and other key products and services; arranging for adequate training of their employees; and implementing a program of regular in-depth study to identify the various types of deficiencies in the provision of their products/services.

The results in **Table VI** show that Islamic bank customers appear to be highly satisfied with bank employees - as indicated by the relatively high satisfaction score of 4.08. This finding reflects Islamic bank long-standing commitment to hire, train and maintain qualified personnel. The warm, trustworthy relationship developed between Islamic bank employees and the customers of the bank is largely attributed to the management policy regarding the emphasis on the importance of such relationships as a means of promoting Islamic values in the society and furthering the viability of Islamic bank systems.

According to the results of the chi-square tests presented in, it appears that there is a significant relationship between customer age and the relative importance of Islamic principles as a selection criterion. This is indicated by the high value of chi-square of 89.1 which is significant at 0.000 level. A detailed examination of the responses reveals that more than 84 per cent of the customers in the 25-35 age group consider Islamic principles to be a very important variable in their bank selection decisions, while only 56 per cent of the customers in the 35-50 years age group consider those principles to be very important.

Based on these findings it appears that adherence to Islamic principles has a relatively large influence on customers’ bank selection decisions, especially on those relatively younger customers (25-35 years). As most of the customers in this age group will be looking for Islamic financing schemes to finance their acquisition of various durable goods, banks can respond positively by offering various financing schemes to take advantage of this fast-growing lucrative market of relatively younger customers.




Regarding the relationship between the customers' educational level and the relative importance of bank selection criteria, the results presented in **Table VIII** reveal that there is a significant relationship between the level of education and the relative importance of "Islamic principles" in the bank selection process. Well-educated customers - high school and college degrees - tend to put more emphasis on Islamic principles in selecting their banks than those customers in the other educational groups. Furthermore, recommendations and advice provided by family and friends tend to have more influence on the less-educated customers, as indicated by the significant  $X^2$  value of 31.59. Finally, the significant  $X^2$  value of 24.4 indicates that there is a strong relationship between the customers' level of education and the relative importance of "convenient location" as a selection criterion. A review of the responses received reveals that highly-educated people tend to put more emphasis on the relative importance of bank location as an attribute of their bank selection than do other customers who are relatively less educated. The implication of this finding is that Islamic banks whose customer base includes a large number of well-educated customers, must take into consideration the preferences/desires of those customers when choosing the location of their offices/branches. Again, this study confirms the importance of location as a bank selection criterion, which was also reported in some previous studies (Hegazy, 1995; Javalgi et al., 1989).

## CONCLUSION

This study was designed to investigate the banking behavior of Islamic bank customers in N.W.F.P. A comprehensive profile analysis of Islamic bank customers was conducted. Furthermore, customer awareness of key Islamic bank products/services, their usage of those services and their satisfaction with the delivery systems utilized in extending them were also investigated. Finally, the key attributes used by Islamic bank customers in making their selection decisions were also examined.

The general conclusions which can be derived from this study are:

- First, the results of the study show that the majority of Islamic bank customers are well educated, with approximately 40 per cent holding secondary school certificates, and about 50 per cent holding a bachelor degree or above. Furthermore, the results also show that about 80 per cent of Islamic bank customers fall between 25-50 years.
- Second, the study results indicate that more than 75 percent of Islamic bank customers have had previous banking experience, and about 54 per cent of the current customers have maintained banking relationship with their Islamic bank for more than one year.

- Third, the findings of the study show that customer awareness and usage rates are quite high for four key banking products/services: Murabaha (88.1 per cent), Modaraba (94 per cent), and investment accounts (85 per cent). Among the least used product/services were: money order drafts, traveler cheques, letter of credit and specially ordered bank statement.
- Fourth, the results of the study also indicate that Islamic bank customers in NWFP were found to be most satisfied with products and services they use most. Murabaha and modaraba financing received the highest satisfaction score. However, the lowest satisfaction score was associated with the Islamic financing schemes. This suggests that Islamic banks should re-examine their financing schemes with special attention given to the procedures followed and the true costs that customers using those schemes are actually paying.
- Fifth, the results reported in this study indicate that bank employees received the highest satisfaction score, followed by bank equipment. 

**Table-1**  
Profile of Islamic bank customers

<b>Age</b>	<b>Percent</b>
Less than 25 years	13.5
25-35 years	46.7
36-50 years	31.9
Above 50 years	5.6
<b>Education</b>	
Under Secondary School	4.8
Secondary School Certificate	40.4
Graduate	38.1
Master Degree	14.8
<b>Income</b>	
Less than Rs. 10000	11.1
Rs.10000-15000	30.7
Rs. 15000-20000	24.8
Rs. 20000-25000	15.9
Rs. 25000-30000	6.3
More than Rs.30000	10.7

**Table-II**  
History of banking relationships

Panel	Attribute	Percent
A	Previous banking relationship with conventional banks	
	Yes	76
	No	24
B	Duration of banking relationship with Islamic banks	
	Less than 1 year	27
	1-2 Years	18.5
	2 Years and More	54.1

**Table-III**  
Awareness and usage of Key Islamic bank products/services

Sr.No	Type of Product/service	% awareness	% usage
1	Murabaha Financing	88.1	55.6
2	Mudaraba Financing	94.4	86.7
3	Musharika Financing	43.3	8.9
4	Financing Facilities	71.5	34.8
5	Investment Accounts	85	63.8
6	Current Accounts	75.8	56.9

**Table-IV**  
The relationship between socio-demographic factors and the usage of key Islamic bank products/services

Socio-demographic factors	Murabaha Financing	Mudaraba Financing	Musharika Financing	Savings Account	Investment Accounts	Financing Facilities	ATM	LC	Bank Statements	Money Orders
Age										
X2	14.81	2.44	7.44	9.09	1.86	3.79	3.0	4.56	1.27	3.191
D	3	3	3	3	3	3	3	3	3	3
F	0.005	0.655	0.11	0.05	0.77	0.43	0.55	0.33	0.86	0.363
P										
Income										
X2	39.1	5.04	5.47	2.81	16.53	8.62	3.8	5.62	6.16	9.88
D	5	5	5	5	5	5	5	5	5	5
F	0.001	0.54	0.48	0.83	0.01	0.19	0.69	0.47	0.41	0.01
P										
Education										
X2	13.5	4.44	2.92	11.11	10.76	8.20	0.98	0.54	3.60	1.85
D	4	4	4	4	4	4	4	4	4	4
F	0.02	0.48	0.71	0.05	0.05	0.14	0.96	0.99	0.61	0.60
P										

**Table-V**

Degree of Satisfaction with Key Islamic Bank Products/services

Type of Product/service	Degree of Mean Score	Satisfaction Rank
Murabaha Financing	3.30	4
Mudaraba Financing	3.76	2
Musharika Financing	1.70	6
Savings Accounts	3.79	1
Current Accounts	1.83	5
Investment Accounts	3.60	3

**Table-VI**

Degree of satisfaction with the basic elements of product/service delivery systems

Elements of product/service delivery system	Degree of Satisfaction	Rank
Bank Employees	4.08	1
Equipment	3.28	4
Location	3.48	2
Evening banking hours	3.87	3

**Table-VII**

Degree of importance of factors affecting the customer choice of Islamic Banks

Factor	Degree of Importance	Rank
Islamic Principles	4.7	1
Family and Friends	3.51	3
Convenient Location	3.00	4
Rate of Return	3.85	2

**Table-VIII**

Results of the chi square tests of the relationship between socio-demographic factors and the relative importance of the selection criteria

<b>Selection Criteria</b>				
<b>Socio-demographic factors</b>	<b>Islamic Principles</b>	<b>Family and Friends</b>	<b>Convenient Location</b>	<b>Rate of Return</b>
Age				
X2	89.1	32.82	26.92	11.19
DF	12	12	12	12
P	0.00	0.08	0.13	0.512
Income				
X2	75.27	31.58	24.79	10.67
DF	20	20	20	20
P	0.000	0.10	0.15	0.10
Education				
X2	75	31.59	24.4	10.67
DF	16	16	16	16
P	0.001	0.05	0.10	0.557

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The knowledge society is the first human society where upward mobility is potentially unlimited. Knowledge differs from all other means of production in that it cannot be inherited or bequeathed. It has to be acquired anew by every individual, and everyone starts out with the same total ignorance.

Peter F. Drucker: *Managing in the Next Society*, page 260

**The Road not Taken**

*Yet knowing how way leads on to way*

*I doubted if I should ever come back*

*I shall be telling this with a sigh*

*Somewhere ages and ages hence:*

*Two roads diverged in a wood, and I*

*I took the one less travelled by*

*And that has made all the difference*

Robert Frost

**ARTICLE**

## **Technical, Allocative and Economic Efficiencies in Sugarcane Production in Pakistan: A Non-parametric Approach**

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### **ABSTRACT**

*The objective of this paper is to measure the technical, allocative and economic efficiencies of sugarcane farms in Pakistan. These efficiencies are measured by data envelopment analysis method using the farm level data collected from 333 sugarcane growers of Pakistan in 2008. The results show that the average technical efficiency of the sugarcane farms is 75 percent, the average allocative efficiency is 83 percent, and the average cost efficiency is 62 percent. The results indicate that the sugarcane farms of Pakistan can reduce the costs of production by 38 percent to produce the same level of output by using the inputs in optimal proportion and by improving the technical efficiency. The results also show that the existing level of sugarcane production can potentially be increased by 33.33 percent with the same level of inputs by improving the technical efficiency of the sugarcane farms.*

**Key words:** Data envelopment analysis, efficiency, sugarcane

**JEL classification:** D24, Q12

### **INTRODUCTION**

Sugarcane is one of the major crops of Pakistan. In the year 2009-10, sugarcane was sown in the area of 0.943 million hectares with estimated sugarcane production of 49.373 million tonnes and yield of 52.357 tonnes per hectare (Government of Pakistan, 2010). According to FAOSTAT (2010), Pakistan has become the fourth largest sugarcane producer in the world in terms of area harvested and the fifth largest in terms of production. However, it stands at 63<sup>rd</sup> place in the world in terms of yield. Despite among the top growers in the world, Pakistan has been net importer of sugar almost each year due to lower sugarcane yield and the rising demand for sugar. Thus, there is need to investigate the productivity and

efficiency across sugarcane farms, and to evaluate the gap between the actual and potential production of sugarcane in Pakistan.

Sugarcane is an important cash crop of Pakistan, especially for small farmers, as about 68.5 percent of the total area under sugarcane is cultivated on farms with farm size under 10 hectares (Government of Pakistan, 2003). To achieve its target production, the government announces the procurement price for sugarcane each year. However, the government is also facing increased pressure to reduce the price of sugar to protect the low-income consumers. Furthermore, with open world market competition and increasing costs of production, the sugarcane growers who are cost-inefficient will face challenges to continue producing sugarcane. Thus, to investigate the implications for sugarcane growers, there is a need to measure the cost efficiency of sugarcane producers as well as its distribution across farms. In the regime of the WTO, farmers face much variation in input prices, especially the price of fertilizer and diesel. Thus, there is a need to investigate the ability of farmers to respond optimally in using various inputs due to changes in the input prices.

The above issues are investigated by various measures of efficiency. Input-oriented technical efficiency measures the ability of a firm to reduce all inputs to produce the given level of output. Input-oriented allocative efficiency measures the ability of a firm to reduce the cost of production by using the inputs in optimal proportion given their respective prices and the production technology. Input-oriented economic efficiency (cost efficiency) measures the ability of firm to minimize the costs of production to produce the given level of output through the input-oriented technical and allocative efficiencies. Output-oriented technical efficiency<sup>5</sup> measures the ability of a firm to produce maximum output by using the given level of inputs (Coelli et al., 2005).

The efficiency of firms can be measured by two broad approaches: parametric and non-parametric. The parametric approach is based on the specification of a functional form for a production function (or cost function, profit function), estimated by econometric techniques. The parametric approach is stochastic, and includes the random error term. However, it imposes parametric restrictions. For example, Cobb-Douglas production function assumes unitary elasticity of substitution (Chavas and Aliber, 1993). Furthermore, estimating econometric model poses challenges of including the all relevant inputs in the production function due to multicollinearity problem. The nonparametric approach for measuring efficiency is data envelopment analysis (DEA), which is based on

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<sup>5</sup> Output-oriented allocative and economic efficiencies are measured when there are multiple products. We do not investigate these efficiency measures, as there is a single product, namely sugarcane crop, in the present study.

mathematical programming technique. This approach is nonstochastic, but it does not impose the parametric restrictions and does not have the multicollinearity problem. Distinctions and advancement of these two approaches are discussed in Fried et al. (2008, pp.31-33).

The objective this paper is to measure the technical, allocative and economic efficiencies of sugarcane farms in Pakistan using the nonparametric DEA method. In this study we measure the input-oriented technical, allocative and economic efficiencies and output-oriented technical efficiency. We investigate the average as well as the distribution of these efficiency measures. The rest of the paper is organized as follows. The next section describes the model followed by a section on data and definition of variables. The fourth section presents the empirical results. The last section draws conclusions.

## MODEL

Technical, allocative and economic efficiencies are measured for the sampled sugarcane farms of Pakistan using data envelopment analysis (DEA), which is a nonparametric approach based on mathematical programming technique. DEA method was first introduced in the study by Charnes et al. (1978), which was based upon the work of Farrell (1957), Boles (1966), Shephard (1970), and Afriat (1972). Charnes et al. (1978) introduced input-oriented measure of efficiency with the assumption of constant returns to scale (CRS) technology. The CRS assumption was relaxed by Banker et al. (1984), who proposed a variable returns to scale model of DEA. A comprehensive overview of DEA methods is presented in Fare et al. (1994), Coelli et al. (2005), and Fried et al. (2008), which were reviewed in developing the DEA model of the present study.

The DEA model is presented for single output and multiple inputs, as in the case for this study. We use DEA method with the variable returns to scale technology. Suppose there are  $n$  firms producing the single product by using  $K$  inputs.

To measure the input-oriented technical efficiency of a firm  $j$ , the following linear programming problem is solved:

$$\min_{\theta, \{\lambda_i\}_{i=1}^n} \theta \quad (1)$$

subject to:

$$\sum_{i=1}^n y_i \lambda_i \geq y_j \quad (2)$$

$$\sum_{i=1}^n x_{ki} \lambda_i \leq \theta x_{kj}, \text{ for } k = 1, 2, \dots, K \quad (3)$$

$$\sum_{i=1}^n \lambda_i = 1 \quad (4)$$

$$\lambda_i \geq 0 \quad (5)$$

where  $\theta$  is the input-oriented measure of technical efficiency of firm  $j$ ,  $y_i$  is the quantity of output produced by firm  $i$ , where  $i = 1, 2, \dots, j, \dots, n$ , and  $n$  is the number of firms,  $x_{ki}$  is the quantity of input  $k$  applied by firm  $i$  (for  $i = 1, 2, \dots, j, \dots, n$ ) for  $k = 1, 2, \dots, K$ , where  $K$  is the number of inputs used by the firms, and  $\{\lambda_i\}_{i=1}^n$  are the weights to be determined. Note that there are  $K$  equations in Equation (3). The above model, given in Equations (1)–(4), is solved for firm  $j$  to obtain the optimal value of the objective function,  $\theta^*$ , which is a measure of the input-oriented technical efficiency of the firm  $j$  (TE $_j$ ):

$$TE_j = \theta^* \quad (6)$$

This technical efficiency measure satisfies these bounds:  $0 < \theta^* \leq 1$ , where the value of 1 indicates fully efficient firm. Thus, the above problem is solved to obtain  $\theta^*$  for each firm (for  $j = 1, 2, \dots, n$ ).

To measure the input-oriented economic efficiency (or cost efficiency) of firm  $j$ , the following linear programming problem is solved:

$$\min_{\{x_{kj}\}_{k=1}^K, \{\lambda_i\}_{i=1}^n} \sum_{k=1}^K w_{kj} x_{kj} \quad (7)$$

subject to:



$$\sum_{i=1}^n y_i \lambda_i \geq y_j \quad (8)$$

$$\sum_{i=1}^n x_{ki} \lambda_i \leq x_{kj}, \text{ for } k = 1, 2, \dots, K \quad (9)$$

$$\sum_{i=1}^n \lambda_i = 1 \quad (10)$$

$$\lambda_i \geq 0 \quad (11)$$

where  $w_{kj}$  is the price of input  $k$  applied by firm  $j$ . The above model, given in Equations (7)–(11), is solved for firm  $j$  to obtain the optimal solution:  $\{x_{kj}^*\}_{k=1}^K$  and  $\{\lambda_i^*\}_{i=1}^n$ . The economic efficiency of firm  $j$  ( $EE_j$ ) is calculated as follows:

$$EE_j = \frac{\sum_{k=1}^K w_{kj} x_{kj}^*}{\sum_{k=1}^K w_{kj} x_{kj}} \quad (12)$$

Equation (12) indicates that  $EE_j$  is the ratio of minimum cost of production to the actual observed cost of production.

The allocative efficiency of firm  $j$  ( $AE_j$ ) is then computed using Equations (6) and (12) as follows:

$$AE_j = \frac{EE_j}{TE_j} \quad (13)$$

To measure the output-oriented technical efficiency of a firm  $j$ , the following linear programming problem is solved:

$$\max_{\phi, \{\lambda_i\}_{i=1}^n} \phi \quad (14)$$

subject to:

$$\sum_{i=1}^n y_i \lambda_i \geq \phi y_j \quad (15)$$

$$\sum_{i=1}^n x_{ki} \lambda_i \leq x_{kj}, \text{ for } k = 1, 2, \dots, K \quad (16)$$

$$\sum_{i=1}^n \lambda_i = 1 \quad (17)$$

$$\lambda_i \geq 0 \quad (18)$$

where  $\phi \geq 1$ , and  $(\phi - 1)$  is proportional increase in the output that could be achieved by firm  $j$  given the input levels. The above model, given in Equations (14)–(18), is solved for firm  $j$  to obtain the optimal value of the objective function,  $\phi^*$ . To express it in relative measure, the output-oriented technical efficiency of firm  $j$  ( $TEO_j$ ) is defined as:

$$TEO_j = \frac{1}{\phi^*} \quad (19)$$

This technical efficiency measure satisfies these bounds:  $0 < TEO_j \leq 1$ , where the value of 1 indicates fully efficient firm.

The above optimization problems are solved  $n$  times to compute the measures of efficiency for each firm  $j$ , for  $j = 1, 2, \dots, n$ . We solve these models using software DEAP 2.1 developed by Coelli (1996).

## DATA AND VARIABLES

Farm level data are collected from sugarcane farms where sugarcane is grown as a fresh crop<sup>6</sup>. Primary data are collected from 333 sugarcane growers by conducting survey during January–May 2008 in five major sugarcane-producing districts of Pakistan, namely Mirpurkhas and Badin from Sindh province, Faisalabad and Jhung from Punjab province, and Mardan from NWFP. Data were collected on a pretested questionnaire by taking face-to-face interviews on the farms.

The output and inputs are measured per farm of sugarcane crop. The output is measured as kilograms of sugarcane harvested per farm. There are seven inputs including farmland acres under sugarcane crop, labor in man-days per farm, quantity of fertilizer in kilograms per farm, acre-irrigations per farm, tractor hours per farm, bullock hours per farm, and quantity of seed in kilograms per farm. The price of each of these inputs is computed as the market price or the opportunity cost per unit.

<sup>6</sup> Sugarcane fresh crop refers to the recently grown crop with the first harvest.

## EMPIRICAL RESULTS

Technical, allocative and economic efficiencies are measured by DEA method for each of the 333 sampled sugarcane farms in Pakistan. Table 1 presents the descriptive statistics of the efficiency measures, including the average, standard deviation, minimum and maximum values. The results show that the average input-oriented technical efficiency score is 0.75, which indicates that on average 25 percent of the input use can be reduced to produce the observed level of sugarcane production by improving the technical efficiency of farms. The average input-oriented allocative efficiency score is 0.83, which indicates that on average sugarcane farms can reduce the costs of production by 17 percent by using the inputs in optimal proportion given their respective prices even without improving their technical efficiency. The results show that on average the farms have higher allocative efficiency (0.83) than the technical efficiency (0.75).

The average input-oriented economic efficiency is 0.62, which indicates that the sugarcane farms can reduce the costs of production by 38 percent to produce the same level of output by using the inputs in optimal proportion given their respective prices and by improving their technical efficiency. The results in Table 1 show that the average output-oriented technical efficiency is 0.75, which indicates that on average the observed level of sugarcane production is 75 percent of the potential production which can be produced by using the given level of inputs. This implies that the existing level of sugarcane production can potentially be increased by 33.33 percent with the same level of inputs by improving the technical efficiency of the sugarcane farms.

Table 1 also presents the standard deviation of various efficiency measures. The standard deviation was 0.16 in both the input-oriented and output-oriented technical efficiency measures, 0.08 in input-oriented allocative efficiency, and 0.15 in input-oriented economic efficiency. These results indicate that the variation in allocative efficiency across farms is less than that in the other efficiency measures.

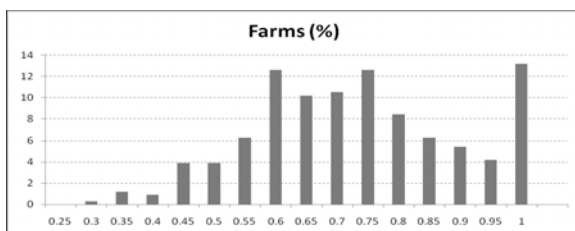
Table 2 presents the relative frequency distribution (in percent) of the various efficiency measures of sugarcane farms in Pakistan. Histograms of these distributions are presented in Figure 1. The results show that about 13.2 percent of the farms are fully efficient in terms of input-oriented as well as output-oriented technical efficiency measures. However, there is a lot of variation across the farms in these efficiency measures. The variation in allocative efficiency across farms is less than that in the other efficiency measures, as about 63 percent of the sugarcane farms have the allocative efficiency in the range of 0.75–0.89. The results show that the input-oriented economic efficiency varies across farms, where the majority of farms (57 percent) have the economic efficiency in the range of 0.50–0.69.

**Table 1. Descriptive Statistics of Efficiency Measures of Sugarcane Farms in Pakistan**

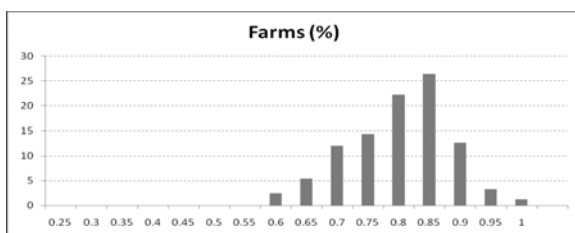
	Input-oriented Technical Efficiency	Input-oriented Allocative Efficiency	Input-oriented Economic Efficiency	Output-oriented Technical Efficiency
Mean	0.75	0.83	0.62	0.75
Std. dev.	0.16	0.08	0.15	0.16
Minimum	0.32	0.62	0.26	0.34
Maximum	1.00	1.00	1.00	1.00

**Table 2. Relative Frequency Distribution (in percent) of Efficiency Measures of Sugarcane Farms in Pakistan**

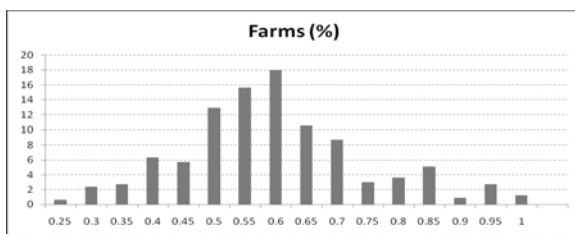
	Input-oriented Technical Efficiency (% Farms)	Input-oriented Allocative Efficiency (% Farms)	Input-oriented Economic Efficiency (% Farms)	Output-oriented Technical Efficiency (% Farms)
<0.29	0	0	0.6	0
0.30 – 0.34	0.3	0	2.4	0.3
0.35 – 0.39	1.2	0	2.7	1.5
0.40 – 0.44	0.9	0	6.3	1.5
0.45 – 0.49	3.9	0	5.7	3.0
0.50 – 0.54	3.9	0	12.9	3.9
0.55 – 0.59	6.3	0	15.6	8.1
0.60 – 0.64	12.6	2.4	18.0	11.4
0.65 – 0.69	10.2	5.4	10.5	11.4
0.70 – 0.74	10.5	12.0	8.7	9.9
0.75 – 0.79	12.6	14.4	3.0	11.4
0.80 – 0.84	8.4	22.2	3.6	7.8
0.85 – 0.89	6.3	26.4	5.1	7.2
0.90 – 0.94	5.4	12.6	0.9	5.1
0.95 – 0.99	4.2	3.3	2.7	4.2
1.00	13.2	1.2	1.2	13.2
Total	100	100	100	100



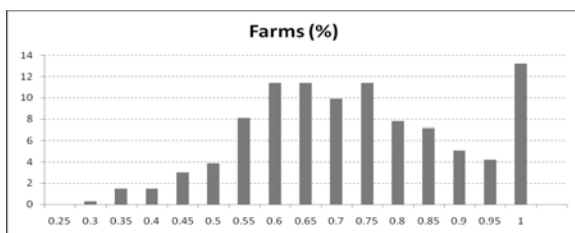
(a) Input-oriented Technical Efficiency



(b) Input-oriented Allocative Efficiency




(c) Input-oriented Economic Efficiency



(d) Output-oriented Technical Efficiency

**Figure 1. Histogram of Efficiency Measures of Sugarcane Farms in Pakistan**

## CONCLUSIONS

This paper measures the technical, allocative and economic efficiencies of sugarcane farms in Pakistan by DEA method using data collected from 333 sugarcane growers of Pakistan in 2008. The results of this study indicate that sugarcane farms of Pakistan can reduce the costs of production by 38 percent to produce the same level of output by using the inputs in optimal proportion and by improving the technical efficiency. The results also show that the existing level of sugarcane production can potentially be increased by 33.33 percent with the same level of inputs by improving the technical efficiency of the sugarcane farms. It is concluded that the priority should be given to improve the efficiency of the sugarcane farms by introducing technical training programs for farmers and by promoting agricultural extension services. 

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It is little short of a miracle that modern methods of instruction have not already completely strangled the holy curiosity of inquiry.... I believe that one could even deprive a healthy beast of prey of its voraciousness if one could force it with a whip to eat continuously whether it were hungry or not...

*Albert Einstein*

There is only one Education, and it has only one goal: the freedom of the mind. Anything that needs an adjective, be it civics education, or socialist education, or Christian education, or whatever-you-like education, is not education, and it has some different goal. The very existence of modified "educations" is testimony to the fact that their proponents cannot bring about what they want in a mind that is free. An "education" that cannot do its work in a free mind, and so must "teach" by homily and precept in the service of these feelings and attitudes and beliefs rather than those, is pure and unmistakable tyranny.

~Richard Mitchell, *The Underground Grammarian*,  
September 1982



**CASE STUDY****A New Business Paradigm in the Offing: Using the Concept of Just-in-Time Production****Aman U. Saiyed**

Institute of Business Administration, Karachi, Pakistan

Cotton is truly the silver fiber of Pakistani industrial fabric. More than fifty percent of our workforce is employed, directly or indirectly, in textile manufacturing. Cotton and cotton textile are the top ranked foreign exchange earners. Even during the current recessionary period, cotton and cotton textiles produced \$9.8 billion dollars of foreign exchange for Pakistan. Table I gives a three year history of foreign exchange earned by the various cotton textile sectors for Pakistan.<sup>1</sup>

Table I

Textile Sectors	Jul-Jun (Thousands of US Dollars)		
	2008-09	2007-08	2006-07
Textile Group (Total)	9,776,297	10,354,218	10,011,350
Raw Cotton	105,416	86,561	75,640
Cotton Yarn	988,907	1,167,597	1,075,966
Cotton Cloth	2,106,840	2,172,879	2,318,481
Knitwear	2,054,853	2,134,729	2,104,198
Bed wear	1,526,642	1,456,417	1,394,372
Tents, Canvas, etc.	983,443	1,204,125	1,097,732
Readymade Garments	387,410	399,233	385,991
Other	1,622,786	1,732,677	1,558,970

The importance of textile export as a foreign exchange earner for Pakistan can be comprehended by the fact that the second ranked foreign exchange earner is not a commodity but the Pakistani expatriate community working overseas<sup>2</sup>. Table II shows the breakdown of foreign export earned through remittances from the expatriate Pakistani workers over four years.

Table II

	July-Jun (Millions of US Dollars)			
	2009	2008	2007	2006
Remittances	7,811	6,452	5,494	4,600

Lately, the textile industry has begun to feel the bite of foreign competition. With Bangladesh and Sub-Saharan African countries winning quota-free textile

import benefits from the U.S. and the European Union, it is becoming harder and harder for Pakistani textile exporters to compete with them. According to All Pakistan Textile Manufacturers Association (APTMA), hundreds of small and medium sized manufactures have shut down their operations and the larger ones (with a few exceptions) are having a hard time staying profitable. They are trying different means to survive. Some of the larger ones have moved all or part of their manufacturing operations to Bangladesh and Sub-Saharan countries or are moving away from manufacturing to wholesaling or even retailing of foreign made textiles.

The cotton textile industry is facing three kinds of problems:

- Increasing competition
- Searching for new markets
- Increasing costs

As cotton textile emerges as the purest form of commodity, we can rest assured that the competition against Pakistani textile will increase rather than decrease. There are new entrants in textile manufacturing. Countries such as Botswana, Viet Nam, Cambodia and Laos have entered into simple textile manufacture while China, India and Bangladesh are moving from simple textiles into sophisticated conversions such as scientific textiles and high-end garment making. In such circumstances, Pakistani textile business will have to match the competitors with better products and exclusive branding. They also need to look for new markets.

### INCREASING COMPETITION

Pakistan's traditional markets for their textile products have been the U.S. and European Union. As mentioned earlier, due to quota-free imports from Bangladesh and Sub-Saharan countries, Pakistan's share of this traditional market has been in decline. Although Pakistani textiles have sold more and more in quantity, the dollar value or per kilogram price for their products have been either unchanged or has very slightly increased. The one cotton textile sector where per kilogram price has increased is cotton garments. Unfortunately, this is one sector where the quantity exported went down. In fiscal year 2006-07 Pakistan exported 44,444 dozen garments while in 2007-08 there were only 38,607 dozen garments exported.<sup>3</sup>

Table III

Textiles	US Dollars Per Kilogram				
	2003-04	2004-05	2005-06	2006-07	2007-8
Cotton Yarn	2.26	2.09	2.06	2.15	2.30
Cotton Cloth	0.71	0.78	0.80	0.92	0.01
Tents and Canvas	2.34	2.52	2.27	2.67	3.19
Bed wear	5.66	5.57	5.58	5.58	5.66
Garments	36.00	32.32	35.18	34.82	38.81

Some of the Pakistani manufacturers, specially the smaller ones, are now trying to work out some or all of the three problems. They are trying to find new markets in yet unexplored territories such as South America and Africa and finding ways to bring down their production costs. These manufacturers, due to their smaller size, have better maneuverability and more options to switch to new customers, change their production models and go for different kinds of value-added textile products.

### LOOKING FOR NEW MARKETS

In the last couple of years, there has been a marked change in the pattern of textile exports. While Pakistan still exports the bulk of its cotton textiles to the traditional markets such as the U.S., UK and other countries of the European Union, the growth markets are elsewhere. Pakistan's textile trade with US has been declining and short of a policy change by the US government there is no likelihood of reversal of this pattern. Mr. Michael Kugelman, program associate with the Asia Program at the Woodrow Wilson International Center for Scholars in Washington, DC believes that the current trade position will not turn favorable in the near future. He writes that "short of inking a free-trade agreement with the US (presently a non-starter), Pakistan has little assurance of gaining better access to American markets anytime soon"<sup>4</sup>. In his opinion, Pakistan ought to diversify its exportable products and look for other markets to export its products. The numbers bear him out. Table IV below shows the amounts of cotton textiles exported (in thousands of US dollars) to various countries for fiscal years 2006-07 and 2007-08 and the net percentage change from 2006-07 to 2007-08. It appears that some of the more enterprising exporters are now moving to markets where there is less competition for their products and better opportunities to enhance profits. Such new markets are Norway, Turkey, Australia and New Zealand.<sup>5</sup>

Table IV

Country	2007-08	2006-07	% Change
USA	531,794	651,114	-18.33
UNITED KINGDOM	156,570	174,806	-10.43
CANADA	17,110	19,760	-13.41
BELGIUM	54,473	60,467	-10.06
TURKEY	22,771	13,675	66.52
NORWAY	5,990	3,387	76.85
BRAZIL	2,688	1,246	115.73
POLAND	1,510	969	55.83
AUSTRALIA	8,792	8,607	2.15

## **CONTROLLING AND MANAGING COSTS**

While studying Supply Chain Management (SCM) we look at the nature of costs to determine the profitability of a product. SCM allows us to look not just at the production phase of costing but at the entire chain of purchasing, manufacturing and marketing process. This requires us to calculate costs associated with acquiring and maintaining raw material inventory, application of costs during work-in-process, storing finished goods and finally distributing finished goods to the ultimate consumers<sup>5</sup>. This analysis indicates that the longer the SCM process the higher the costs that the manufacturer and distributors are to bear. The end result of SCM is that the business people can increase their profitability by shortening the supply chain process.<sup>6</sup>

One approach that the manufacturers use to shorten the manufacturing process is to use ‘demand pull’ rather than ‘supply push’ manufacturing. The contemporary management theory advocates a demand pull rather than a supply push production approach. The Japanese have perfected this approach into Just-in-Time Inventory and Just-in-Time (JIT) Production. The JIT Production model awaits orders from the customers. The production process thus results in rapid production and immediate delivery keeping the employed working capital extremely efficient. In JIT production, demand triggers each step of the production function. The manufacturer is therefore, able to keep the materials inventories at a very low level, requires minimum set-ups and delivers the finished goods immediately to the customers thus avoiding finished goods inventory build-up. JIT production or lean production, results in cost savings and production efficiencies for the manufacturer.<sup>7</sup>

## **INCREASING COSTS**

Pakistani manufacturers have so far been able to control their costs by reducing labor costs. They have switched from keeping permanent labor to contract labor, have moved production from major cities to smaller cities, and have avoided going into value added production fearing that this would require them to hire skilled labor that is more expensive than semi-skilled ones. These tactical moves have only delayed their day of reckoning. When they lower their labor costs through such means, other countries, such as Bangladesh with much lower costs, beat them on their own turf. When they lower the quality of their products, countries with less skilled labor such as Laos and Cambodia start matching them with their products. Their salvation therefore, rests in better and more efficient use of resources and not in lowering costs through hiring cheap labor and compromising on quality.

## **COST MANAGEMENT**

Production costs consist of:

- Direct materials
- Direct labor, and
- Overhead

Costs in the first two categories are called prime costs. Direct material and direct labor costs can be identified and traced to the production process and are directly charged to the units produced. Overhead costs are charged to production using a predetermined overhead rate.

Costs classified as direct are alternatively called variable costs. These costs directly increase or decrease with the change in production activity. Costs considered indirect may or may not be variable. However, majority of these indirect costs are considered fixed. Fixed costs mainly consist of administrative expenses, rent, property taxes, and depreciation associated with nonmanufacturing plant and properties. These costs don't change with the change in activity. These costs are the ones that affect the economy of scale. The more the business works close to its full capacity the more of these costs spread over the units produced lowering the per unit cost. If price remains the same, lower per unit costs result in higher profit to the business. One way to lower per unit cost is to keep the fixed cost per unit as low as possible. This would require companies to rent the facilities rather than own them. Small and medium size operation can do that with better plans and active and efficient management of time. This business strategy where the firm keeps its fixed cost to the minimum thus immediately becoming profitable is called operating leverage.

## **A CASE STUDY**

During a semester-long assignment, a group of my students led by Naved Kamran Khan in the Advanced Management Accounting class conducted a study of a the production process of a businessman who is actually applying all the above mentioned methods to increase his sales and reduce costs thereby increasing profits. The study was conducted in November of 2008 in North Karachi. The purpose of conducting this study and publishing is to introduce this flexible method of manufacturing to other entrepreneurs in textile business.

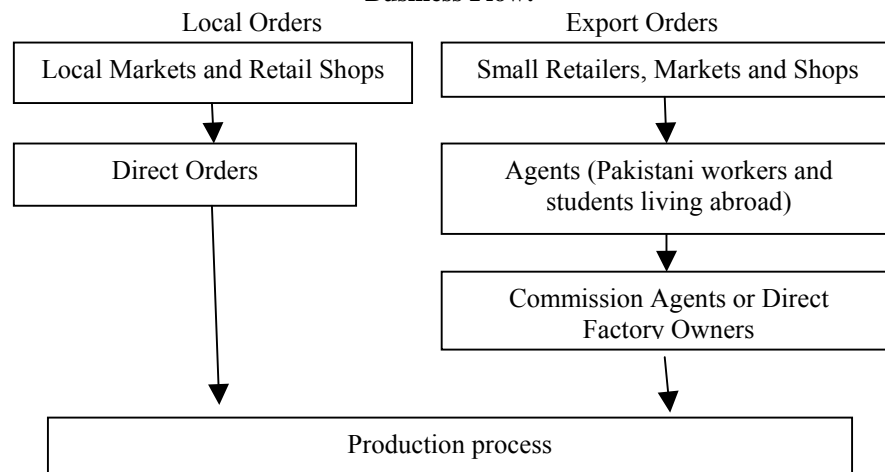
During our study of the textile business in North Karachi, which is the hub of small textile and allied manufacturing, we came across a unique model of textile manufacturing and marketing business. This is a highly profitable operation and is

worth studying for the sake of making small and medium size textile businesses competitive and profitable.

The firm (if it is called a firm) has a very simple business process. They receive orders locally or internationally. Production process starts when the firm has the actual order in hand. The firm goes out and hires the whole production apparatus. They hire the space, equipment, and the workers both skilled and un-skilled, and start production. Once production is complete and the orders are delivered, they shut down the operation, pay off the workers and return the physical facilities to the owners. According to the owner of the firm, Mr. Alam Khan, New Karachi business cluster always has surplus of space and equipment all the time and you can always hire skilled and unskilled labor that is willing to work for contracts of any duration. As long as they are satisfied with the contract rate they are willing to work. Mr. Alam Khan claims that his production approach has created a virtual work environment that is beneficial to him, the owners of facilities (both space and equipment), and the workers.

To keep the process efficient and simple, Mr. Khan only deals in bed linen. He only takes one order at a time. This allows him to deliver quality while avoiding hiring and keeping skilled labor on a permanent basis. Mr. Khan is a true entrepreneur. He runs the business himself, has no administrative or other professional help and directly deals with both the suppliers and contractors. He does not have an accountant and keeps all his expenses (he has no long term or fixed costs) in an old fashioned register. He keeps one expense register for one order. He therefore, easily verifies his costs pertaining to that order and by subtracting the costs from the revenue of that particular order can determine the profitability of the order.

#### Business Flow:



The IBA students worked with the owner, they copied information from the registers for several orders for bed linen and developed the cost structure for the products.

They found out that Mr. Khan only makes bed linen in three sizes; single, queen and king. He is currently serving small orders for local markets and small and medium-size orders for Australia and New Zealand.

His resource accumulation and usage is shown in the following table:

<b>Raw Materials</b>	<b>Space and Equipment</b>	<b>Labor</b>
Agents/Kapra markets	Renting space in North Karachi	Labor agents (jobbers)
Warehouses	Renting cutting and stitching machines	Direct hire through old contacts
Factories, stock lots, etc.		

The production process consists of:

- Renting of space and equipment to meet the order.
- Buying raw material from any of the above three sources in accordance with the order received from a local buyer or a buyer from Australia or New Zealand.
- Hiring the required labor size to finish the order on time.
- Producing the ordered product (s).
- Packing and shipping the order to the buyer or his agent.

The cost sheet prepared from the data recorded in the expense registers shows the cost of production and shipping of the three types of bed sheets per piece:

<b>Size</b>	<b>Labor</b>	<b>Materials</b>		<b>Overhead &amp; Packing</b>	<b>Total (Rs.)</b>	<b>*Total AUS\$</b>
Single	Rs. 25	3 mtrs.	Rs.130/mtr.	Rs. 152	567	10.30
Queen	Rs. 35	4.5mtrs.	Rs.140/mtr.	Rs. 152	817	14.85
King	Rs. 45	5 mtrs.	Rs.145/mtr.	Rs. 152	922	16.75

\*Using a conversion rate in effect in Nov 2008 of Rs. 55 to one AUS\$

The student calculated the overhead and packing cost per piece using the following numbers

<b>Fixed Overhead</b>	
Rent	Rs. 13,000
Salary (security guards, etc.)	20,000
Maintenance	10,000
Fuel	<u>10,000</u>
Total Per Month	<u>Rs. 53,000</u>
Total Number of Pieces Per Month (Avg.)	650
Per Piece Overhead Rate (Rs. 53,000/650)	Rs. 82
Per Piece Packing Cost	<u>Rs. 70</u>
Total Overhead and Packing Cost Per Piece	<u>Rs. 152</u>

After packing, the bed sheets are shipped to Australia or New Zealand. The firm realizes a net sale price of twice its cost of production and shipping. His net realized price for one king size beds sheet is therefore, approximately AUS\$34. At the exchange rate of 1 AUS\$ equal to 0.6555 US\$, in effect on November 31, 2008, this converts to US\$22.<sup>8</sup> A king size bed sheet normally weighs about 1 kilogram. This firm therefore, is exporting bed linen to Australia at almost four times the price of \$5.66 quoted by APTMA for bed linen exported by Pakistan in 2008. The owner thinks and we agree that his business model is highly profitable and he does not have to change it for anything.

### **SUGGESTIONS**

If Mr. Alam Khan has such a promising and profitable model and he does not wish to change it why don't we persuade other small and medium-sized textile manufacturers to adapt to his model? This can be done in three ways:

- Propagating his way of doing business
- Getting government agencies such as TDAP to actively involved in encouraging such efforts
- Getting trade bodies to enlist the exporters to try this model

### **PROPAGATING HIS WAY OF DOING BUSINESS**

The purpose of writing this paper is to introduce the concept of virtual production as a Pakistani entrepreneurship to the academic community. We have always praised the way the Japanese or the Americans practice JIT inventory management or JIT production management. We have signally failed to find out if this method of management is practiced in our own country. In these times when we have surplus capacity in both human resource and physical facilities, we should be encouraging people to learn this method of production and export. IBA is in a unique



position to take the lead in this respect. We can hold seminars and lectures to get entrepreneurs to look into this way of doing business. IBA has established the Center for Entrepreneurship. This center can be used to inspire other entrepreneurs to try this approach.

### **TDAP**

TDAP which replaced the Export Promotion Bureau is more actively involved in encouraging Pakistani businesspersons to export. They have the budget, the skills and the contacts to be used to bring the entrepreneurs together. TDAP has also information on foreign importers who want to do business with Pakistani exporters. They are in an ideal position to bring new business to small manufacturers and exporters.

### **TRADE BODIES**

There are several trade bodies working for the welfare of textile related business. Trade bodies such as Pakistan Readymade Garments Association, Pakistan Hosiery Manufacturers Association, and Pakistan Bed Linen Manufacturers Association can be used to bring the two groups of people (the owners of production facilities and the exporters) together. They can act as a clearing house or rather like an employment agency bringing the plant owners and the manufacturers together. At any given time, there is a surplus of plant capacity and manufacturers with export orders and plant deficiency. These trade bodies can approach the two groups of people, even for a fee, to work together. This will not only give an impetus to foreign trade, it would also give the trade bodies an opportunity to serve their members better.



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Wise and effective leadership is practiced only by those who have overcome, as far as humanly possible, all limitations of the mind. Management functions within no single frame of reference. Its scope is as wide as that of the whole operation, as broad as life itself. Whatever constricts the mind must be overcome. As the ladder of responsibility is climbed, each successive step demands more and more flexibility of intellect, more and more capacity to comprehend divergent forces, and more and more power to correlate them into a unified whole.

In the last analysis, only the man himself can correct and overcome the imbalance of performance that specialization creates. Only he can undertake and achieve the broad cultivation of the mind that brings the wisdom, the tolerance, and the intellectual fortitude which are the hallmarks of distinguished industrial leadership.

Clarence B. Randall, *The Folklore of Management* pg. 87-88



## **BUSINESS REVIEW**

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