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# Editorial

*Gurumurthy Kalyanaram*

## **Status of the Journal**

As the editor of this Journal since 2012, this is the sixth issue that we are producing and you will find all the issues to be substantive, inter-disciplinary and eclectic. We produced regular issues in April-May 2012 and 2013 and in October-November 2012. We produced a Special Issue on Global Markets in August 2012, and a Double-Issue in January 2014. All these are available on the website. For your ready reference, I am providing here the relevant URLs.

<http://nmims.edu/NMIMSmanagementreview/Current-Review.php>

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Since 2012, the acceptance rate of the manuscripts has been around 30 percent. The editorial board and the panel of reviewers comprise of scholars and practitioners from all over the world – and we plan to expand both the Board and the Panel of Reviewers. All our publications have been reviewed (double-blind) carefully. We invite your participation and engagement. Thank you for contributions.

Looking ahead, we plan to publish a Special Issue of the Journal in August, and the regular issue in October-November. We look forward to your submissions and suggestion.

## **This Issue**

In this issue, we present seven interesting and eclectic research articles written by global scholars and practitioners.

The article presented by Dr. David Ford on the role of race and gender in organizational culture, and the research presented by Dr. Avinandan Mukherjee and Research Scholar Naz Onel on the impact of social development of women on environmental health were invited by the editor because we wanted to present and discuss the issue of “Diversity” – an important scholarly, business and public policy issue all over the world. While Dr. Ford's arguments are based on primary data and SIMLOG model, professors Mukherjee and Onel present their findings based on extensive secondary data and empirical analyses. As evident from their findings, both the studies – in different domains and context -- affirm the value of diversity

The other seven articles cover a range of topics and interests. Based on empirical analysis, Dr. Venkataramany and Dr. Bhasin discuss the institutionalization of export promotion in India. Employing widely applied SERVQUAL model, Professors Chopra, Chawla and Sharma offer insights into the service quality of higher education in India.

The next three papers are largely conceptual: Professors Lal and Bharadwaj on cloud-based information technologies as enablers of organizational agility, Professors Koul, Sinha and Mishra on decision-making by consumers at the Bottom of the Pyramid, and practitioner doctor Bhaidkar on medical tourism in India and Thailand.

## On Diversity

As an academic, I am interested in the role of diversity in educational institutions, corporate work place, non-profit organizations, and in public policy making. But, here, in this short essay, I want to focus on one focused but an important question: Should diversity be a consideration to admissions in colleges and universities? This question resonates all over the world. In India, diversity is largely represented in terms of gender and caste. In United States, one of the important representation of diversity is race.

To deepen the understanding, I restrict my discussion to admissions to US higher educational institutions. Policies that are optimal for US are at least suggestive for other societies and somewhat generalizable to different situations of our decision-making and choices.

While the overall enrollment in higher education may be declining in US, admission to the good schools has become monumentally competitive. For example, in recent years the admission rates in elite institutions has hovered around 5 percent (University of Chicago's rate has plummeted to about 8 percent from about 40 percent.) The admission rates are less than half of what they used to be a decade earlier. Deluged by more applications than ever, the selective educational institutions are rejecting a vast majority of applications. In this context, admission to a credible educational institution is a matter of substantial public import and it is worth examining if diversity should be an element in admission decisions.

The highly selective institutions like Harvard, MIT,

Princeton, Stanford, Yale and others, use a complex and subjective process to consider, from a pre-screened pool of qualified candidates, each person's full range of accomplishments, experiences and potential. To achieve broad diversity the institutions also take into account race and ethnicity, among other factors.

Large number of educationists and policy makers argue that a diverse student body promotes cross-racial understanding and dialogue, reduces racial isolation and helps to break down stereotypes. And that such education better prepares students to contribute in an increasingly diverse workforce and society.

However, there are others who argue that meritocracy is the best approach to admissions. Equal protection under the Constitution, and fairness demand that an otherwise better qualified applicant be not denied admission because of diversity consideration – be it gender or race (or caste).

Both arguments are reasonable and persuasive. But as a society we have to make choices in the consideration of larger societal welfare.

For this, we turn to the US Supreme Court and briefly examine the arguments presented to the Court and how the Court has addressed the role of diversity as an element in admissions to US Colleges and Universities. In arguing before the Court, both the proponents of the consideration of diversity and those opposed to such consideration over and above merit make their most compelling presentations.



The framework and thinking by the US Supreme Court will offer educators and policy makers in India a useful reference for analysis and discussion.

The question of diversity was most recently addressed by the US Supreme Court in Fisher v. University of Texas, 133 S. Ct. 2411<sup>1</sup> and decided by the US Supreme Court in 2013.

The case began when Abigail Fisher sued the University of Texas, claiming that she was not offered admission to the university in 2008 because she was White and that she was better qualified than many of the minority admittees. Fisher demanded equal protection under the US constitution.

However, University of Michigan and many other universities argued before the court that “diversity (broadly defined and including racial and ethnic diversity)” was “absolutely essential” They further argued that “Overwhelming empirical evidence supported by over a century of scientific research unrelated to concerns over racial diversity indicates that a university's complex educational goals and institutional mission cannot be achieved solely by relying on objective criteria such as standardized test scores. Race, national origin and ethnicity, along with other considerations, are sometimes relevant in this assessment of an individual because they can provide a social and cultural context in which to understand an individual's accomplishments and life experience.”

(Stanford University's Amicus Brief).

In analyzing this important question, the U.S. Supreme Court has held that due deference to the University's experience and expertise regarding whether student body diversity is a compelling interest must be given, but the University also had to prove that the means it chose to attain that diversity were narrowly tailored to achieve its goal. However, the Court ruled that race could be used in the admission process only “if no workable race-neutral alternatives would produce the educational benefits of diversity”(without discussing whether the word “workable” takes account of the university's other educational goals — such as assembling a student body with good academic credentials.) Essentially, the Court called for a strict scrutiny, without defining what that strict scrutiny meant. For now, the Court has not defined the thresholds and/or parameters of what might constitute strict scrutiny.

Overall, the Court ruling implies that race-based affirmative action can continue. As a result of all this, educational institutions remain more or less free to continue to do what they have been doing, provided they are more careful in their justification.

Based on the US Supreme Court decision, the Obama administration issued new guidelines to colleges and universities instructing them on how best to address the issue of race and affirmative action. The U.S.

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<sup>1</sup> The relevant history of US Supreme Court decisions in the matter of diversity is as follows.

In 1978, the Court ruled in Regents of the University of California v. Bakke U.S. 265 that quotas (such as such as the 16 out of 100 seats set aside for minority students by the University of California, Davis School of Medicine) were impermissible, but the use of race as one factor in admissions was reasonable. Allan P. Bakke, an engineer and former Marine officer, who sought admission to medical school and was twice by U.C. Davis brought the suit.

And then there were a pair of important decisions in 2003. In Grutter v. Bollinger, 539 U.S. 306, where Barbara Grutter who was an applicant to University of Michigan Law School complaint that she was discriminated on the basis of race, the Court held that the affirmative action admissions policy of the University of Michigan Law School was acceptable because the race-conscious admissions process that may favor “underrepresented minority groups,” but that also took into account many other factors evaluated on an individual basis for every applicant, did not amount to a quota system. And in Gratz v. Bollinger, 539 U.S. 244, where Jennifer Gratz was denied admission to the University of Michigan undergraduate program, the Court held that the University's point system's “predetermined point allocations” that awarded 20 points to underrepresented minorities “ensures that the diversity contributions of applicants cannot be individually assessed” and was therefore unconstitutional.

Department of Education, reiterated that affirmative action remains legal, stating that “The Court preserved the well-established legal principle that colleges and universities have a compelling interest in achieving the educational benefits that flow from a racially and ethnically diverse student body and can lawfully pursue that interest in their admissions program.”

### Summary

In summary, based on extensive analyses by policy makers, scholars and legal thinkers, it is clear that in decision making (including in designing the admissions policies to educational institutions consideration of diversity (such as caste, gender or race) as one of the elements is important and leads to globally optimal outcomes for the society, though some individuals and/or groups may suffer. The design of decisions which include consideration of diversity must be based on many factors. Finally, specific quotas or explicitly predetermined biases in favor of a group do not increase societal welfare and / or productivity.

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# Do Race and Gender Matter Within the Context of Organizational Culture Change?: An American Case Study of Assessing Identity Group Consensus in Organizational Culture Perceptions

David L. Ford, Jr.

## Abstract

Many organizations approach managing diversity as a culture change process. Some, in fact, incorporate managing diversity efforts into their continuous improvement and TQM programs. The present study describes a case study of a major Fortune 1000 corporation that had undertaken a major culture change process targeted at empowering employees, building trust and mutual respect among workers, eliminating unnecessary work procedures, and continuously improving processes associated with all aspects of the organization's businesses. While not initially designed to directly address diversity

management issues, the culture change process, nonetheless, had a number of indirect effects and implications for the organization's diversity efforts, which had recently been initiated at the time of the study. The SYMLOG culture assessment tool was used to assess the company's organization culture. The results are reported by identity group membership categories and implications for diversity management programs are discussed.

**Key words:** SYMLOG theory, cultural diversity, cultural change, managing diversity, organization culture

## Introduction

Whites and people of color who work together on a day-to-day basis frequently view the world from such divergent perspectives that they seem to be, and actually are, often talking different languages and experiencing their working environments and essential relationships from totally different perspectives. Organizational cultures consist of the informal norms, or mental models (deeply ingrained assumptions and images that we carry in our minds of ourselves, other people, and institutions), that support or hinder diversity and that have differential impact on different groups in the organization (Holvino, Ferdman, & Merrill-Sands, 2004). Johnson, Lee, Lee, O'Connor, Khalil, & Huang (2007), and Ultewilligen, Waller, & Pitariu (2013), and other scholars suggest that mental models determine what we see and also shape how we act.

From a cultural perspective, modern organizations are chaotic and much of the failure to maintain high quality, productivity and performance can be attributed to an inability to manage the issues that flow from the newly diverse workforce. On the other hand, when specific work is done to create an environment that is sensitive and skilled in managing these cultural differences, we find organizations characterized by high levels of teamwork, trust, clear communication, high morale and loyalty, and commitment to the organization's vision, mission and goals (Denison, Hooijberg, Lane, & Lief, 2012).

The best approach for creating such an environment is often elusive, and practitioners vary widely in their specific recommendations for achieving such an environment through various diversity initiatives. The path is oftentimes murky. However, adding to the earlier work by Alderfer and his colleagues at Yale (see

e.g., Alderfer, et al., 1980; Alderfer, 1982; Alderfer, et al., 1983), recent empirical evidence has begun to emerge in the literature to guide our thinking and practice in a systematic, comprehensive, and conceptual way, especially as it relates to racial diversity in organizations (cf., Kravitz, 2010; McKay, Avery, Liao, & Morris, 2011; Richard, Ford, & Ismail, 2006; Richard, Murthi, & Ismail, 2007; Roberson & Park, 2007). Certainly, the books by Cox (1993), Cox & Beale (1997), Thomas & Gabarro (1999), and Bell & Nkomo (2001), among others, have offered some very useful insights. More recently, the books by Bell (2011), Davidson (2012), and Ferdman (2013) offer more contemporary useful ways for understanding and developing diversity competency in organizations. Nonetheless, additional empirical studies, grounded in appropriate theory, are needed to guide our thinking and action in the area of assessing diversity initiatives in organizations.

The present case study's focus is on the research application of a particular framework that has been used extensively in organizational development practice in the USA and abroad, as well as in classroom instruction, in areas unrelated to issues of race or gender diversity. This framework is SYMLOG (cf. Hare, Sjøvold, Baker, & Powers, 2005). SYMLOG is a promising assessment technology that can reinforce the research findings from other methodologies and can provide insight and direction to organizations on how to proceed or to facilitate various forms of diversity and its effective management in organizations.

In recent years, a number of multi-national corporations in the USA have approached the topic of managing diversity as a culture change process rather than simply training. Some, in fact, are incorporating

managing diversity efforts into their continuous improvement and TQM programs, resulting in a dramatic increase in the level of morale and sense of “belonging” of the employees. The present case study discussed herein describes how SYMLOG assessment procedures were used to diagnose the organizational culture of a major Fortune 1000 corporation (herein referred to as XYZ Corporation) that, at the time the data was gathered, was approximately two years into a major culture change process targeted at empowering employees, building trust and mutual respect among workers, eliminating unnecessary work procedures, and continuously improving processes associated with all aspects of the organization's business. While not initially designed to directly address diversity management issues, the culture change process nonetheless had a number of indirect effects and implications for the organization's diversity efforts.

In the following pages, we provide a brief overview of the SYMLOG Rating System and the kinds of reports that are generated through the data analysis process. Examples of data representative of organizational cultures of American businesses in general are presented, followed by the data for XYZ Corporation that was the subject of the present case study.

## Overview of SYMLOG

SYMLOG theory is a comprehensive integration of findings and theories from psychology, social psychology, and related social science disciplines. It is unique in its breadth, its high degree of integration, and its practical implementation (Bales, 1985; Bales, 1999; Hare & Hare, 1996).

As a *field theory*, SYMLOG takes effective account of the fact that every act of behavior takes place in a larger context, an interactive "field" of influences. The

approach assumes that one needs to understand the larger context -- personal, interpersonal, group, and situation -- in order to understand patterns of behavior and to influence them successfully. The measurement procedures of SYMLOG are designed to measure both the behavior patterns and their larger context. In other words, through the SYMLOG system, the researcher can determine the extent to which organizational members' values and behaviors related to a particular person or concept are consistent with, or contrary to, values and behaviors that have been shown to contribute to overall effectiveness.

The SYMLOG Individual and Organizational Values questionnaire used in various studies is composed of 26 values that each represents a different combination of three structural dimensions used to define the SYMLOG space (see Figure 1). When rating people or concepts, respondents judge the frequency with which the values described in the questionnaire were actually shown by the person or concept being rated.

The value dimensions that are used to describe the impression of the person or concept being rated include: (1) *Values on Dominance vs Values on Submissiveness*, (2) *Values on Friendly Behavior vs Values on Unfriendly Behavior*, and (3) *Values on Acceptance of the task Orientation of Authority vs Values on Non-acceptance of the Task Orientation of Authority* (Bales, 1970; Bales & Cohen, 1979; Bales, 1988; Bales & Koenigs, 1992). The three dimensions are arranged in a three-dimensional SYMLOG space. Each of the 26 values on the SYMLOG rating form is designed to measure a specific vector direction out from the center of the three-dimensional space and, as noted previously, assesses either one, two, or all three value dimensions simultaneously.

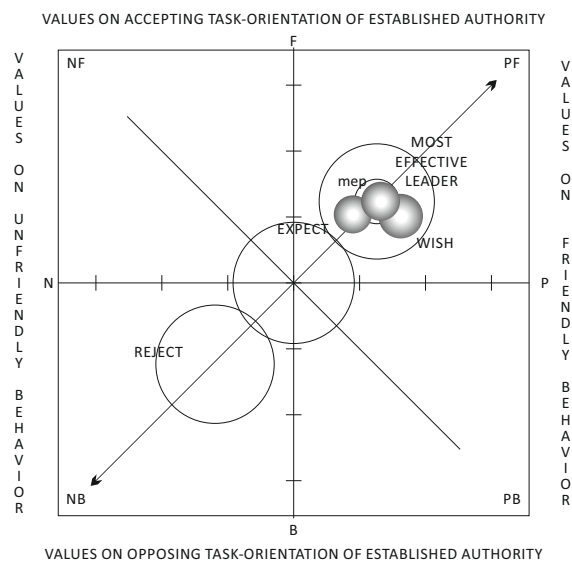
In Figure 2, which represents a two-dimensional depiction of the three-dimensional SYMLOG space in what is called a **field** diagram, the horizontal axis represents the dimension *Values on Friendly Behavior* (coded “P” for “Positive”) to *Values on Unfriendly Behavior* (coded “N” for “Negative”). The vertical axis represents the dimension *Accepting the Task Orientation of Established Authority* (coded “F” for “Forward” in the field) to *Opposing the Task*

*Orientation of Established Authority* (coded “B” for “Backward” in the field). The third dimension, *Values on Dominance* (coded “U” for “Up”) vs *Values on Submissiveness* (coded “D” for “Down”), is represented by the size of the small circle marking the location of an image on the other two dimensions. Larger circles represent greater emphasis on dominance and smaller circles represent emphasis on submissiveness.

Values on Dominant Behavior	1 U	Individual financial success, personal prominence and power
	2 UP	Popularity and social success, being liked and admired
	3 UPF	Active teamwork toward common goals, organizational unity
	4 UF	Efficiency, strong impartial management
	5 UNF	Active reinforcement of authority, rules, and regulations
	6 UN	Tough-minded, self-oriented assertiveness
	7 UNB	Rugged, self-oriented individualism, resistance to authority
	8 UB	Having a good time, releasing tension, relaxing control
	9 UPB	Protecting less able members, providing help when needed
Neither Dominant Nor Submissive	10 P	Equality, democratic participation in decision making
	11 PF	Responsible idealism, collaborative work
	12 F	Conservative, established, “correct” ways of doing things
	13 NF	Restraining individual desires for organizational goals
	14 N	Self-protection, self-interest first, self-sufficiency
	15 NB	Rejection of established procedures, rejection of conformity
	16 B	Change to new procedures, different values, creativity
	17 PB	Friendship, mutual pleasure, recreation
Values on Submissive Behavior	18 DP	Trust in the goodness of others
	19 DPF	Dedication, faithfulness, loyalty to the organization
	20 DF	Obedience to the chain of command, complying with authority
	21 DNF	Self-sacrifice if necessary to reach organizational goals
	22 DN	Passive rejection of popularity, going it alone
	23 DNB	Admission of failure, withdrawal of effort
	24 DB	Passive non-cooperation with authority
	25 DPB	Quiet contentment, taking it easy
	26 D	Giving up personal needs and desires, passivity

Source: © 1998 SYMLOG Consulting Group. Used with permission.

Figure 1: SYMLOG Individual and Organizational Values



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Figure 2: SYMLOG Reference Field Diagram

The sample field diagram presented in Figure 2 shows data for perceptions of several concepts which are (1) most effective leader, (2) values wished for in behavior (WISH), (3) values rejected in self and others (REJECT), and (4) values one would expect others would rate them as showing in behavior (EXPECT). As such, the field locations of these concepts comprise what is referred to as a Reference Field Diagram. It is termed a “reference” field diagram because the field locations of the concepts represent what is known in Chaos Theory as an “attractor.” Attractors do not act like magnets but rather they represent a position where solutions to a complex puzzle repeatedly show up (Koenigs, 1993).

In the American experience, most of the values that are found to contribute to effective teamwork are located in the PF quadrant of the field diagram. In Figure 2, the dashed circle image labeled *mep* represents the “most effective profile.” This is the location of the value position, derived from thousands of ratings by managers, of effective leadership and experience with effective teams and found to be optimal for the American business culture. It represents a balance between an emphasis on accepting the task-orientation of established authority and emphasis on friendly behavior. Indeed, according to Bales (1999) and Koenigs (1993), *mep*'s location in the field diagram represents the empirical solution to the dynamic puzzle of leadership.

An alternative way of displaying SYMLOG rating data is a **frequency bar graph** which shows the average ratings received by an individual, a group, or a concept, for each of the 26 values. The zigzag line in the bar graph shows the frequencies for the “most effective profile” (*mep*). The frequency indication associated with each item represents the average rating for that

value on the given image, on a continuum of “Rarely”, “Sometimes”, and “Often.” Several frequency bar graphs are presented later in the paper where the data is reported and discussed.

This section of the paper was intended only as a brief introduction to the SYMLOG measurement system and the forms in which results of research are usually displayed. The interested reader is referred to Bales (1988, 1999), Bales and Cohen (1979), and Polley, Hare, & Stone (1988) for additional information about the SYMLOG rating system. The sections that follow present a brief review of the relevant literature, the research methodology, and the study results, conclusions, and recommendations for future research. Values and Organizational Culture Change.

According to Adler and Gundersen (2008), the growing importance of world business creates a demand for managers sophisticated in international management and skilled at working with people from other countries. Cross-cultural management examines the behavior of people in organizations around the world and trains people to work in organizations with employee and client populations from several cultures. Cross-cultural management compares organizational behavior across countries and cultures and, more importantly, seeks to understand and improve the interaction of co-workers, clients, suppliers, and alliance partners from different countries and cultures (Adler and Gundersen, 2008).

The cultural orientation of a society reflects the complex interaction of the values, attitudes, and behaviors displayed by its members. Individuals express culture and its normative qualities through the values that they hold about life and the world around them. These values, in turn, affect their attitudes

about the form of behavior considered more appropriate and effective in any given situation. The continually changing patterns of individual and group behavior eventually influence the society's culture, and the cycle begins again (Adler, 1991, 1997).

Values are relatively general beliefs that either define what is right and wrong or specify general preferences (Brown, 1976). Research has shown that personal values affect corporate strategy (Guth & Taguiri, 1965) and that managerial values affect all forms of organizational behavior including group behavior, communication, leadership, and conflict levels (Posner & Munson, 1979). A complete understanding of the function of leadership in any organization would require information at the individual, interpersonal, group, organizational and societal levels. Fortunately, values are represented at each of these system levels. One can compare the values of an individual, or an effective member or leader, with those of an organization or a country. Further, one can also express the values associated with an organization's culture in terms of these same values and can assess the values using a system such as SYMLOG.

Holvino et al. (2004) suggest that the best way to change an organization's culture is to identify the informal practices and beliefs that make up that culture, to analyze their consequences in terms of their impact on different identity groups of employees, and then to introduce small experiments designed to change every day practices. This is often accomplished by starting with a cultural audit, which provides a good way of understanding the assumptions and norms that predominate in an organization. XYZ Corporation, on which the present case study was based, had undertaken a major change initiative in the early 2000's designed to change its culture from one of

“command and control”, in which one was rewarded for having a “play it safe” attitude, to a culture that embodied the values of trust, openness, inclusiveness, and accountability amid a climate that valued the skills and abilities of all employees rather than a select few.

No specific research hypotheses were generated with respect to the change in the organization's culture. Rather, a primary goal of the case study was to demonstrate the viability and versatility of the SYMLOG rating system as a tool for use in evaluating the effectiveness of any culture change process, especially a culture change that indirectly involved managing diversity as a key component of the change. Further, a couple of related issues were of interest in the study. These were: (1) what is the effect of identity group membership on the work experiences of individuals who exercise managerial authority, and (2) what are the critical points of intervention for changing the organization to successfully utilize identity group diversity? These related issues are also discussed below along with the other results of the study.

### **Research Design and Methodology**

The organizational culture assessment in this Fortune 1000 corporation was obtained as part of a larger data collection and feedback effort associated with the convening of a “Corporate Workshop on Diversity: Race and Gender Issues.” The author of this paper was part of a four-person consulting team retained to facilitate the diversity workshop for the organization. The understanding of senior management, at the time the workshop was conducted, was that key differences in organizational experiences and opportunities existed in XYZ Corporation for white and non-white (especially black) managerial staff. These feelings had surfaced on an ad hoc basis over time in



management's conversations with African American employees in the company. As a result, it was decided to hold a formal forum whereby these feelings and perceptions could be aired more systematically and openly in order that they could be addressed.

Sixty participants, half white and half black, were selected by the organization from the senior executive salary band to attend the workshop (including the CEO and his direct reports). There were 15 white men, 15 white women, 27 black men and 3 black women. The three black women represented the population of black women in the corporation who were in the senior executive salary band. The team of consultants interviewed each of the meeting participants, with interviewer-interviewee pairings matched by race and gender. However, in a few instances, some of the black men were interviewed by the black female consultant in order to even out the work load. No other race-gender groups were identified to participate in the meeting at the time it was held because other groups were either too small or were considered over-represented in the employee profile. All persons who were to attend the workshop had to be interviewed by one of the consultants. Persons could be interviewed and choose not to attend the workshop, but they could not attend the workshop without first being interviewed. A large portion of the workshop was spent with the consultants giving feedback to the participants about what was revealed in the interviews.

As a means of additional data for corroborating the interview data, the SYMLOG Organizational Culture Survey from the SYMLOG Consulting Group was given to all of the participants who were to attend the workshop. The purpose of the organizational culture survey was to form a clear picture of the current values

for teamwork embodied in the organization. The participants were selected such that a cross-section of all business units in the corporation was represented. The products and services of the business units included industrial goods, consumer goods, and financial services (credit services).

The SYMLOG Organizational Culture Survey asked respondents to think about their experiences in XYZ Corporation and to consider the ways the members of the organization interacted with each other and with customers. Respondents were further urged to reflect on the organizational philosophy, policies, and procedures as these are played out on a daily basis over time, and also on their understanding of what will be required to have the organization manifest a commitment to total quality, excellence, and customer service in the future. With these reflections in mind, respondents were asked these three questions:

1. In general, what kinds of values are CURRENTLY shown in the culture of your organization?
2. In general, what kinds of values need to be shown in the culture of the organization in the FUTURE in order to be most effective?
3. In general, what kinds of values are members of your organization actually REWARDED for showing in behavior now?

Respondents answered each question with the SYMLOG rating scale by responding "Rarely", "Sometimes", or "Often" to each of 26 descriptive values on the rating form. The values were shown previously in Figure 1.

## Results

Because the focus of this case study is on the application of the SYMLOG methodology to the organizational change process at XYZ Corporation, our discussion's focus is on the SYMLOG results rather than the interview results. The results of the SYMLOG Culture Assessment are provided in two separate parts:

1. Group Average Field Diagrams for all concepts rated, based on the racial Sub-groupings of respondents (Part 1).

2. Group Average Bar graphs for race-gender identity groups on Current Culture, Future Culture, and Rewarded Culture perceptions (Part 2).

### Part 1 Results

Table 1 presents the means, standard deviations, inter-correlations, and reliability coefficients for the three SYMLOG dimensions, and Table 2 presents the SYMLOG final field locations for the three organizational culture concepts rated by the respondents.

**Table 1: Means, Standard Deviations, and Inter-correlations Among the SYMLOG Dimensions for All Respondents+**

Dimension	Mean	Std. Dev.	UD	PN	FB
UD	0.80	2.86	(.75)	.01	.21**
PN	1.81	3.57		(.76)	.19**
FB	6.60	4.31			(.78)

\*\* p < .01

+ Reliability coefficients appear in parentheses on diagonal.

**Table 2: Final Field Locations for SYMLOG Dimensions Associated with Respondents' Ratings of Organizational Culture Concepts**

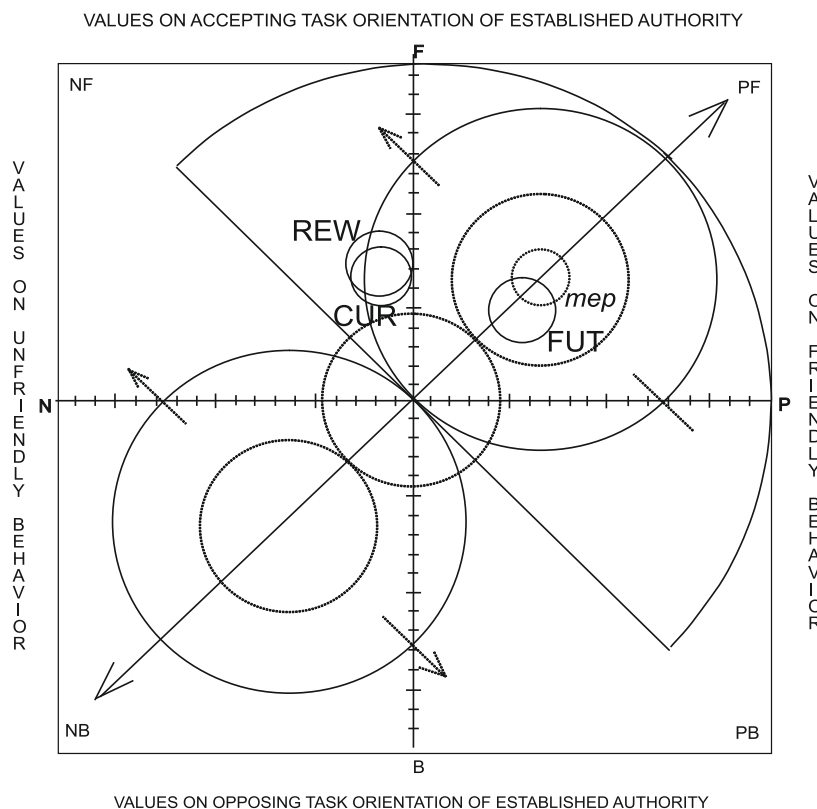
Culture Concept	Dimension	White		Black	
		Mean	Std. Dev	Mean	Std. Dev.
Current Culture (CUR)	U-D	1.0	2.41	0.7	3.21
	P-N	-1.8	3.05	-1.9	2.98
	F-B	6.1	2.62	7.0	4.11
Future Culture (FUT)	U-D	1.8	3.55	3.2	5.85
	P-N	4.3	4.27	5.7	3.78
	F-B	3.2	2.43	4.9	3.34
Values	U-D	2.3	3.08	3.0	2.29
Rewarded (REW)	P-N	-0.9	3.32	-1.8	4.46
	F-B	7.3	5.16	7.5	3.88

As seen in Table 1, the respondents perceived the UD dimension to be significantly positively related to the FB dimension and unrelated to the PN dimension; the PN and FB dimensions were also perceived to be significantly positively related. The more dominant the perceived culture and the more friendly the perceived culture, the more it was perceived to be conforming or accepting of the task orientation of authority. Further, Table 2 suggests that there was a tendency for respondents to perceive the organizational culture differently on the PN dimension, wherein the Current Culture image was significantly different from the Future culture image but not the Rewarded Values image on this dimension. Thus, this pattern of results reflected in Table 2 indicates that the three SYMLOG

dimensions distinguished among the three organizational culture concepts, although some of the differences were not statistically significant.

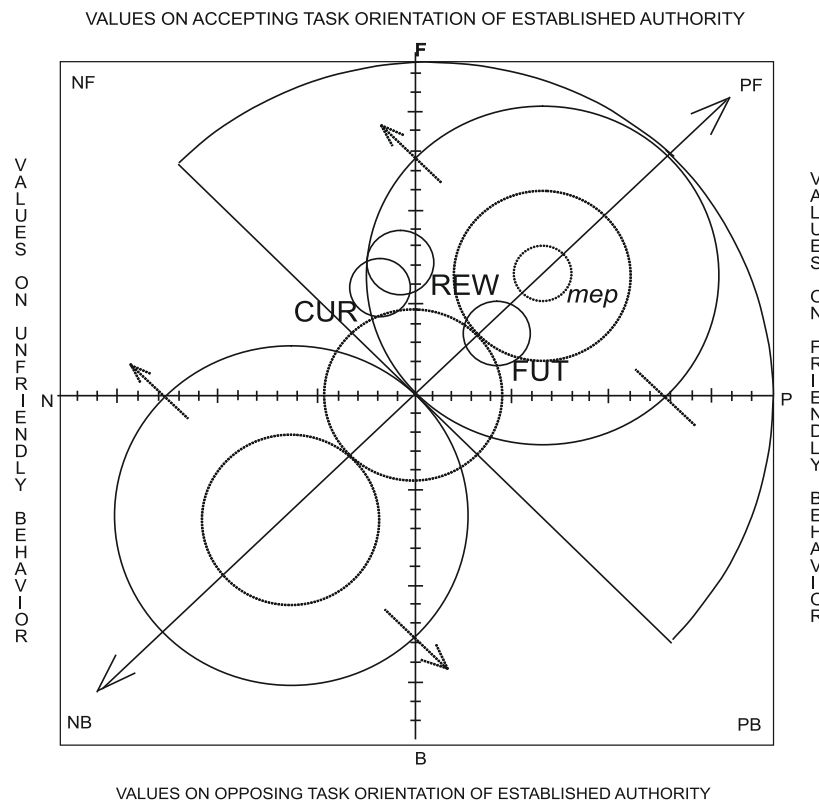
There existed a very strong organizational culture in XYZ Corporation and practically all respondents were socialized to it and perceived it in similar ways. There was a great deal of consistency among each of the race-gender sub-groups in terms of how they rated each of the concepts, and the results reflect these similarities across the different identity groups. Figures 3 and 4 provide representations of the Group Average Field Diagrams for black and white respondents, respectively.

**Figure 3: SYMLOG Group Average Field Diagram for Black Respondents: Organizational Culture Assessment of XYZ Corporation**



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**Figure 4: SYMLOG Group Average Field Diagram for White Respondents: Organizational Culture Assessment of XYZ Corporation**



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As can be seen in Figures 3 and 4, the image for Future Culture (FUT) is located in the desired PF quadrant and is closest to the most effective profile (*mep*) image, supporting the conclusion that respondents have a good grasp of what is needed in the future to be most effective. However, the images for Current Culture (CUR) and Values Rewarded (REW) both depart dramatically from the normative location for effective teamwork and are both nearly contained in the NF quadrant of the SYMLOG space. The values currently shown in the organization's culture, as well as values rewarded, are largely related to *conservative, established, "correct" ways of doing things, and restraining individual desires*. These values, while necessary at times, can be dangerous to teamwork if overemphasized. These results are consistent with a

number of comments made by black male respondents during the interviews conducted prior to the corporate diversity workshop. The interview comments depicted the organization as being very conservative, old line, and very traditional.

Values needed to be shown in the future related to responsible idealism and collaborative teamwork. Thus, these results suggest that the organization's present cultural values will need to change in the future in order for the organization to be effective, and those things that are currently rewarded now will need to be reexamined. These results also illustrate how difficult it is to change a *strong* culture such as what existed at XYZ Corporation. Even after two years' experience with a specific cultural change process

designed to promote the values needed in the future to be more effective, e.g., empowerment, teamwork, collaboration and cooperation, the values still being reflected in the current organizational culture appeared to be counter to the new desired values.

## Part 2 Results

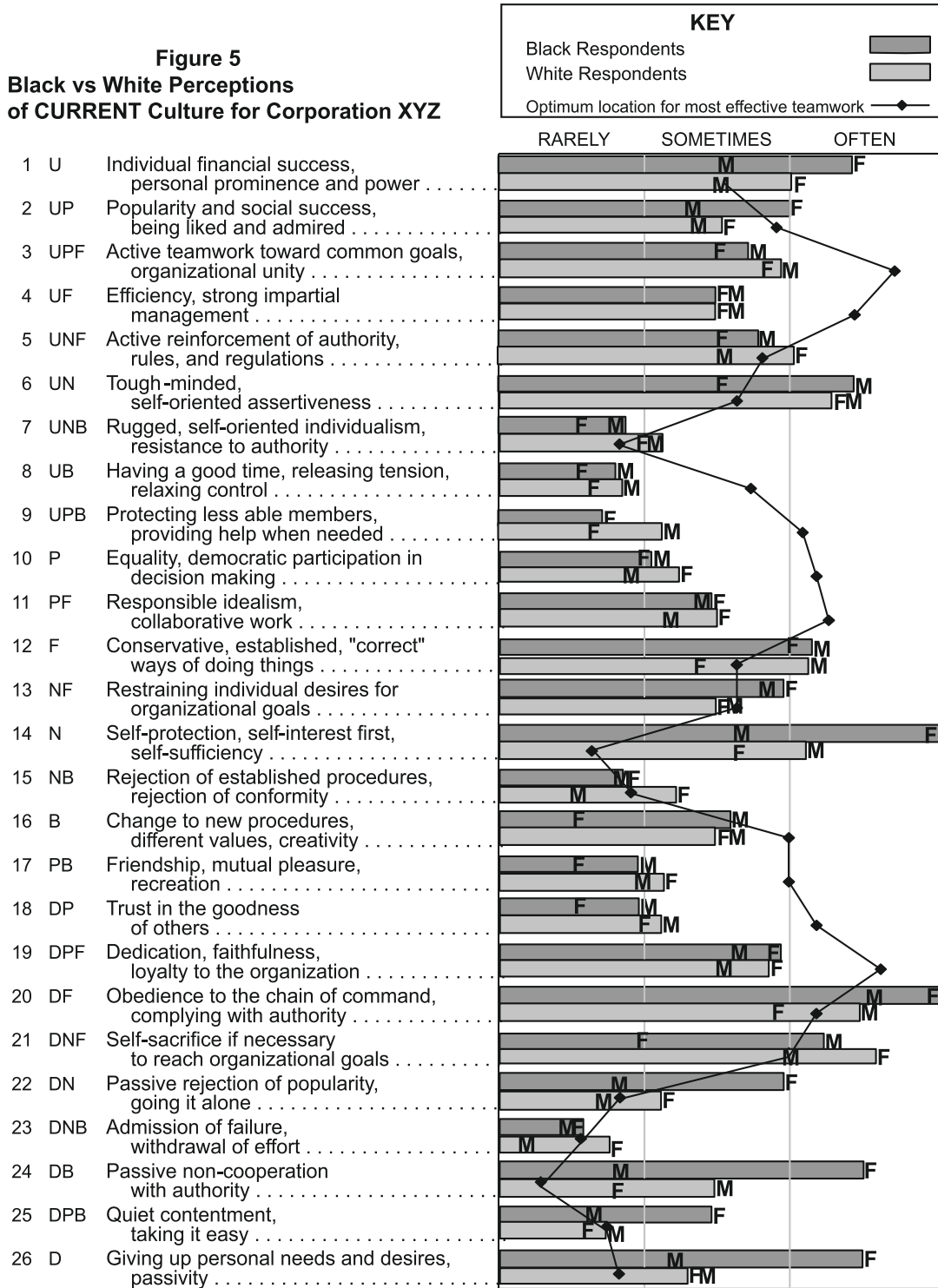
The 26 individual and organizational values for which respondents provided SYMLOG ratings play differential roles in impacting overall teamwork effectiveness. In other words, the 26 rating items are categorized into three major areas: values that *contribute* to effective teamwork (13 values), values that may be *necessary sometimes* but *dangerous* to teamwork (5 values), and values which almost always *interfere* with teamwork (8 values) (see Figure 1). While a good deal of similarity existed among all respondents concerning their perceptions of the organization's culture, there were several noticeable differences among race-gender sub-groups worth noting. These are discussed below with respect to the Group Average Bar graphs for each of the organizational culture images. Each item of the bar graph displays the average frequency rating on that item for both male respondents and female respondents within each racial sub-group.

Generally speaking, black females' perceptions of the CURRENT culture were the most negative, particularly with respect to a perception of overemphasis on five of the eight values that almost always interfere with teamwork. Both white males and females, as well as black males perceived the organization's culture to overemphasize three of the eight values that interfere with effective teamwork (see, e.g., 14N, 24DB, 26D). In general, the values overemphasized related to *self-protection, self-interest first, self-sufficiency; passive non-compliance with authority; and passivity* (See

Figure 5). These values all suggest that the organization's internal environment and culture was not very nurturing or supportive and it lacked caring and concern for one's co-workers. This "rugged individualism" atmosphere and "survival of the fittest" approach to doing business is not conducive to an enjoyable work environment.

Furthermore, for each of the race-gender sub-groups, at least 10 of the 13 values that contribute to effective teamwork were under-emphasized in the organization's current culture. On the other hand, for the organization's FUTURE culture, each race-gender sub-group perceived at least 9 of the 13 values that contribute to effective teamwork to be "close" to the *mep* norm (see Figure 6). Several values that contribute to effective teamwork were overemphasized, probably because of their deficiencies in the CURRENT culture. These values were 8UB (having a good time, releasing tension), 11PF (responsible idealism, collaborative work), 16B (change to new procedures, different values), and 18DP (trust in the goodness of others) (see Figure 6). The current culture's results are reinforced by the REWARDED values' bar graph, which almost mirrors the CURRENT culture results (see Figure 7). All of these results are shown in the SYMLOG bar graphs for each race-gender sub-group in Figures 5-7.

**Figure 5**  
**Black vs White Perceptions**  
**of CURRENT Culture for Corporation XYZ**

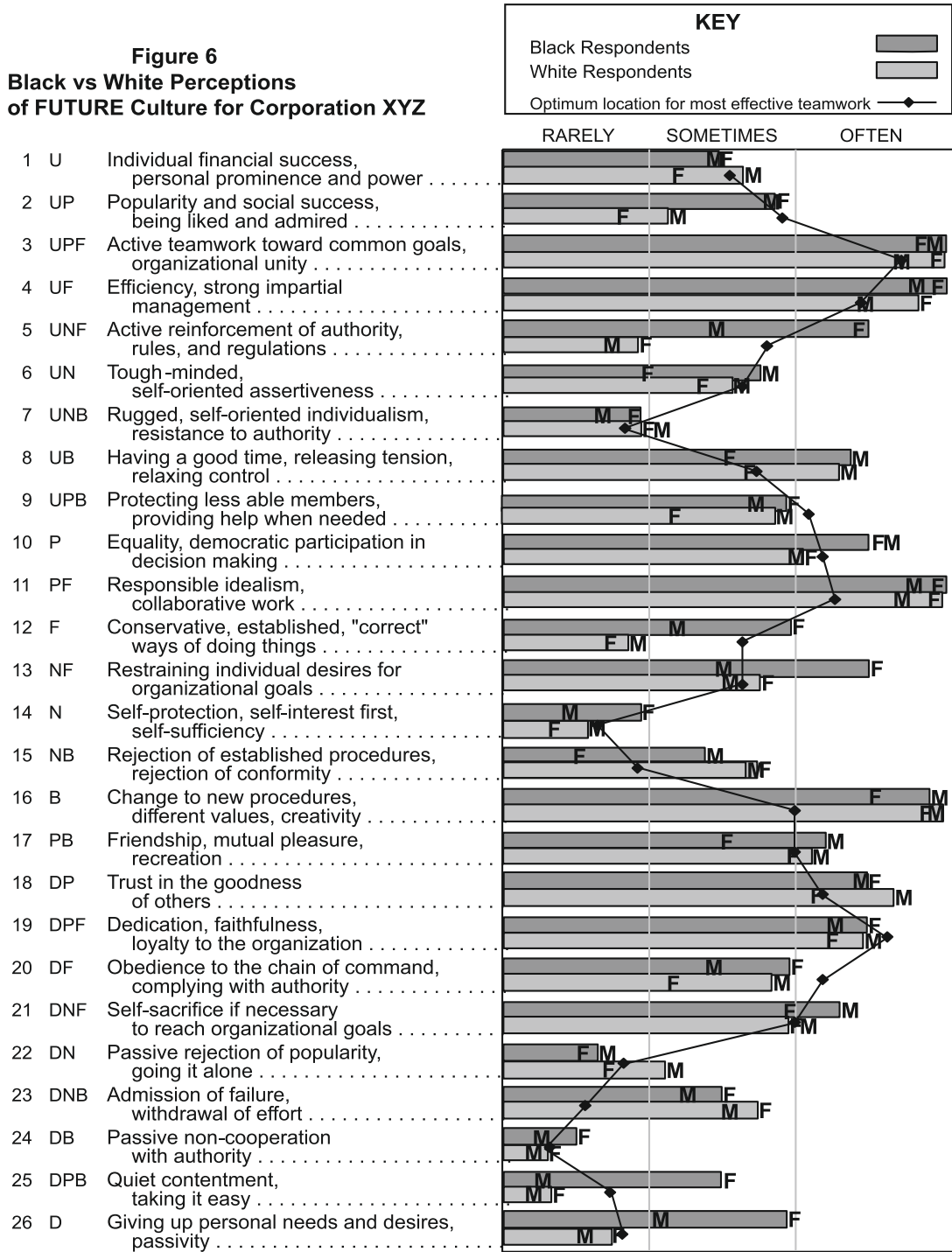


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Figure 5: Black vs White perceptions of CURRENT culture for Corporation XYZ

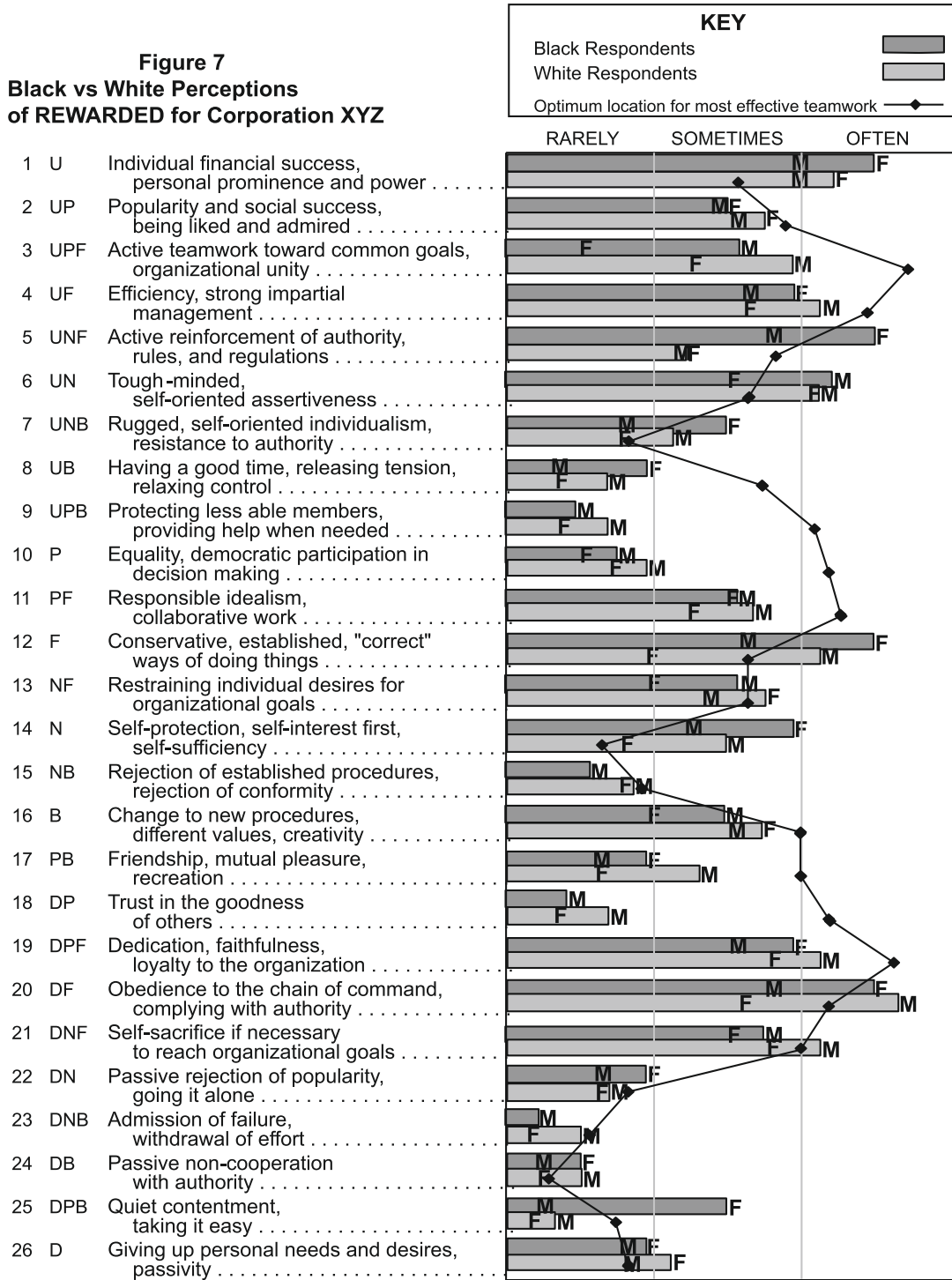
**Figure 6**  
**Black vs White Perceptions**  
**of FUTURE Culture for Corporation XYZ**



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 Figure 6: Black vs White perceptions of FUTURE culture for Corporation XYZ

**Figure 7**  
**Black vs White Perceptions**  
**of REWARDED for Corporation XYZ**



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 Figure 7: Black vs White perceptions of REWARDED for Corporation XYZ



## Discussion

The SYMLOG organizational culture data for this Fortune 1000 corporation suggest that the organization, as currently seen by the present respondents, is characterized more by the values of individually aggressive achievement than by the qualities of effective teamwork. Perhaps in this environment, there is not sufficient trust potential for individuals to take the kinds of personal risks with one another that are necessary for the establishment of effective collaborative relationships around work tasks. Certainly, the reward structure of the organization does not support this. Indeed, the bar graphs for values REWARDED in the organization for both white and black respondents indicated a very short bar for item 18 DP: *"trust in the goodness of others."*

Several of the values shown in the current culture had rather extreme ratings on the P-N dimension and/or F-B dimension. This accounts for the location of the CURRENT and REWARDED images in the negative side of the SYMLOG space. See, for example, items 6 UN, 14 N, and 20 DF for overemphasis and items 3UPF, 9UPB, 10P, and 17PB for under-emphasis on the bar graphs in Figures 5 and 7. Such extremes suggest that XYZ Corporation is not a very friendly place to work.

However, there is hope. The respondents know the values that need to be shown in the future in order to be effective. In fact, they would even emphasize a good deal more than necessary on several of the values needed for effective teamwork, probably because these values are under-emphasized so much in the current culture (e.g., item 11 PF -- responsible idealism, collaborative work, and item 16 B -- change to new procedures, different values, creativity). As noted previously, these results can be seen in Figure 6.

Thus, the present set of SYMLOG analyses could almost serve as a baseline for the current culture, even though a culture change process had been underway for two years at the time the data was collected. One might speculate that the results would have been even more disturbing had the SYMLOG data been collected prior to the initiation of the culture change process. This author's consulting relationship with XYZ Corporation has ended. However, future progress toward the desired culture could be documented, and the relative effectiveness determined, through successive periodic administrations of the SYMLOG Organizational Culture Survey because several years have passed since the initial culture assessment was done.

An additional vehicle for tracking the effectiveness of the culture change process is provided by the SYMLOG assessment process through the calculation of image effectiveness scores based on the bar graph results. Recall that the 26 values which are rated by the respondents can be categorized into three different categories according to their relative impact on teamwork effectiveness. The SYMLOG Consulting Group has developed a rubric for computing and interpreting an effectiveness score based on a weighted sum of the number of items falling in each category and whether or not they are over- or under-emphasized. Table 3 provides the effectiveness scores associated with the three culture assessment images for each racial sub-group. As seen in Table 3, the FUTURE Culture image is the only one of the three images that has an effectiveness score that begins to approach the competent range for white respondents and falls within the superior range for the black respondents. All other scores fall well below adequacy. Subsequent assessments in the future would hopefully show improvements in the magnitude of the effectiveness scores for the CURRENT Culture and Values REWARDED images over time.

**Table 3: SYMLOG Effectiveness Scores for Organizational Culture Images By Racial Subgroups**

Rater Subgroup	Current Culture	Future Culture	Rewarded Culture
Black Raters	-90	145	-50
White Raters	-80	75	0

**Score Interpretation (Per SYMLOG Consulting Group):**

<b>SUPERIOR RANGE (140-195 Points)</b>	<b>Guidelines</b>
1. Truly exceptional	170 – 195
2. Generally Exceeded Expected Results	140 – 169
<b>COMPETENT RANGE (80 – 139 Points)</b>	
3. Consistently Met Expected Results	110 – 139
4. Generally Met Expected Results	80 – 109
<b>IMPROVEMENT RANGE (79 or Fewer Points)</b>	
5. Needs Improvement to Meet Expected Results	50 – 79
6. Clearly Inadequate Results	49 or less

**Summary**

The versatility of SYMLOG as an assessment tool has already been demonstrated with respect to the assessment of green management concepts (cf. Whaley, Ford, & Perry, 2013), collegiality among co-workers (cf. Ford & Whaley, 2012), and cross-cultural leadership issues in Central Asia (cf. Ford & Ismail, 2006, 2008). The SYMLOG system offers a powerful approach for diagnosing organizational culture and tracking culture change. By examining the results across race-gender identity groups, one can gain further insights into how a culture change process might be addressing various issues associated with managing a diverse workforce. Certainly the differences in perspectives shown by the various race-gender identity groups would provide useful information for further interventions that might be needed to address specific issues. The present case study hopefully has provided useful insights into how the SYMLOG rating system can be used in this context.

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# Does Social Development for Women Impact Environmental Health? A Cross-national Study

**Avinandan Mukherjee and Naz Onel**

## **Abstract**

Women's status in society, benefits granted, and access to resources provided by governmental agencies, can impact the well-being of the environment and public health at the national level. There is a marked scarcity of research in the literature on environmental performance of countries directly affecting human health and the link between women's social development and environmental health. This study aims at executing a cross-country study to examine the effects of social development for women on environmental health by incorporating different variables from World Bank and Environmental Performance Index. The main objective of the study is to empirically test the effects of different components of women's social development practices on environmental health performance of countries and examine if different country clusters by income, i.e., high income, upper middle income, lower middle income, and low income, reveal different results in terms of determining environmental health. Multiple linear regression models were employed to test the eleven hypotheses on a sample of 163 countries.

Empirical results show that environmental health performance at the country level is significantly influenced by women's social development dimensions such as unemployment in female labor force in the case of high income countries, vulnerable female employment in upper middle income and low income countries, HIV prevalence in females in upper and lower middle income countries, and females' progression to secondary school in low income countries. A combined country analysis of the effects of women's social development on environmental health, however, shows significant effects of females' primary school completion, HIV prevalence, vulnerable employment and contraceptive prevalence as predictor variables for environmental health. These findings provide useful theoretical and policy implications for women's empowerment and social development initiatives.

**Key words:** Social development, women, environmental health, country comparison

## INTRODUCTION

The rapid increase in problems arising from destruction of natural resources, rapid industrialization, urbanization, and pollution caused by humans, need immediate solutions; social empowerment of women may be the key. Sustainable growth at country specific and global levels highly depends on women's social development such as getting education, joining the labor force, and receiving the necessary health treatments. The female population, however, is one of the most underutilized resources in the world (OECD, 2008) that needs instant attention of the researchers and policy makers. In fact, according to the Organisation for Economic Co-operation and Development's (OECD) publication *Gender and sustainable development: Maximising the economic, social and environmental role of women*, currently, "the female half of the world's human capital is undervalued and underutilized the world over... Better use of the world's female population could increase economic growth, reduce poverty, enhance societal well-being, and help ensure sustainable development in all countries" (p.32) (OECD, 2008). In this study, we aim to investigate whether better social opportunities and development for the female population of the nations could in fact impact sustainable development. More specifically, we examine whether social development for women could have an effect on the well-being of the environmental health conditions of a country.

Sustainable development requires the healthy development of the countries, that is, development without impacting the environment and human health. Human health is determined by a broad variety of external and internal factors. These factors include individual behaviors, the quality of genetic, quality and accessibility of healthcare, and the wide-ranging

external environment such as the quality of water, air and living conditions (Hernandez and Blazer, 2006). Today, the significant and detrimental effects of environmental factors on human health are accepted by many (e.g., Iles, 1997). In fact, in many parts of the world, it is easy to see that environmental factors such as pollution and degradation are being increasingly responsible for ill-health of the world population (WHO, 1997; UNDP, 1998). Rapidly industrialized societies generate a wide variety of pollutants and wastes that affect human health adversely, and cause decline or loss of biological diversity. In many cases, destroyed habitats negatively affect the quality of living conditions of human communities. For instance, millions of people are constantly exposed to unnecessary physical and chemical hazards in their living environment and work place. According to WHO (2012), more than one billion people lack access to safe drinking water, and more than three billion people have access to water that lacks even minimally acceptable sanitation requirements. Tuberculosis causes deaths of three million people every year, and at any given time, 20 million are affected by it. Hundreds of millions suffer from sicknesses caused by poor nutrition (Yassiet *al.*, 2001; Moeller, 2005). All these and many more negative impacts of deteriorated environmental goods on people's lives help us to infer that the health of millions of people around the world highly depends on their access to unaltered environmental goods such as clean air and uncontaminated water. In fact today, a wide range of domestic as well as international bodies such as the World Bank, World Health Organization (WHO) and United Nations (UN), recognize the associations between environmental conditions and human health (Iles, 1997).

According to the World Health Organization,

environmental health means “those aspects of the human health and disease that are determined by factors in the environment.” It addresses all the external factors (*e.g.* physical, chemical, and biological) impacting an individual and all the related factors impacting behaviors of the individual. Environmental health includes the evaluation and control of these external factors that can potentially affect human health (WHO, 2011). Over the last four decades, the scope of environmental health issues has expanded significantly, from a narrow focus which simply takes into account refuse and sewage, to consideration of increasingly widespread and multifaceted phenomena that involves many connections between different social, economic, ecological, and political factors. Given the greater visibility of impacts, the kinds of environmental problems that cause direct effects on human health such as air, water pollution or waste disposal, are more readily recognized as environmental health problems. Additionally, basic environmental goods (*e.g.* water, soil), quality and accessibility have been recognized as the main sources of environmental health problems (Iles, 1997). Even though all of these aforementioned problems can be seen as infrastructure development issues, which are solvable through scientific and technological advancements, nowadays there is an ever increasing concern about environmental health issues and acknowledgement that they cause broader public health problems that need immediate solutions. Certainly, coming up with a solution could be possible by finding the potential contributors of environmental health. This way, it would be possible to understand how the environmental health of a country or a region changes over time, and how communities can either adapt to these changes or alter and fix them with the help of governments.

Previous studies related to environmental conditions focus on the environment in general. Most of these studies have shown that economic development and environmental degradation of a country are closely connected (*e.g.*, Husted, 2005; Mendelsohn, 1994). Although scholars have argued that social and economic development are important factors in determining the level of environmental performance (*e.g.*, Grafton and Knowles, 2004; Husted, 2005, Park *et al.*, 2007; Peng and Lin, 2009), none of these studies have tried to compare and evaluate the relationship of social development of women on environmental health. Herein lays the importance of empirically determining the significance of social development of women on environmental health conditions. The purpose of this research is to provide some modest initial steps in the search for greater understanding of the statistical relationship between elements of women's social development and environmental health. A quantitative analysis of women's social development is not an easy task, mainly because social development is itself a complex concept. In this paper, we take World Bank's social development indicators as a base to capture social development of women and employ eleven parameters for our analysis. In addition, we include country clusters from World Bank to control for economic development, as well as environmental health variables to complete the statistical analyses.

Given its theoretical significance and practical relevance, the mechanisms linking women's social development such as educational attainment and labor participation and national environmental health (*i.e.* impacts on human health) deserve systematic and in-depth analysis. Specifically, this study attempts to answer the following research questions: (1) Does social development of the female population at the



national level affect the environmental health of a country? (2) Does the level of economic development of the country moderate the impact of the effects of women's social development on environmental health? In the following section, we first develop a set of eleven hypotheses, and then test these hypotheses on a sample of 163 countries.

## Literature Review And Hypotheses

### Construction

Over the past few decades, there have been growing concerns for environmental degradation in the process of globalization and growth, and this damage to the environment is attributed by some to increased economic activity. The possible relationship between environmental degradation and economic development has been the research focus of numerous studies (*e.g.* Xing and Kolstad, 2002; Tonelson, 2000, Grossman and Krueger, 1995; Antoci, 2009; Tamazian *et al.*, 2009). However, these studies have failed to account for the effect of social development of women. If we consider the influence of women capital on increasing economic growth, reducing poverty, enhancing societal welfare, and most importantly, ensuring sustainable development (OECD, 2008), it can be inferred that the will and ability to protect the environment and environmental health are influenced by the factors related to women's social development. In this research study, we are interested in exploring the relationships between women's social development and environmental health.

The World Bank provides social development and gender indicators that delineate women's social development (World Bank, 2012). Some of them that we chose for the purpose of our study are: female population's primary school completion rate,

progression to secondary school, share of women employed in the non-agricultural sector, vulnerable employment, labor participation, unemployment, proportion of seats held by women in national parliaments, prevalence of HIV, births attended by skilled health staff, and contraceptive prevalence. All these should lead to a better environmental health condition for the society that has higher social development for women. For instance, lower educational attainment by women can cause a lack of understanding of the importance of environmental protection. Since the population cannot pay the necessary attention to the environment (prime education provided by mothers would get affected), environmental health can deteriorate. However, if the community is knowledgeable enough to see the connection between the harmful practices they adopt and detrimental health outcomes, they can alter their actions towards conserving the limited resources. So, in addition to acquisition of knowledge and skills that promote health such as the implementation of healthier behaviors (Cutler & Lleras-Muney, 2006), higher level of schooling can affect the prospects towards environmental health. Similarly, women's individual health condition is an important determinant of the living standards and human development. Usually, if they have a higher life expectancy, they would feel more sympathetic towards the next generation - their kids - as well as their own future. Therefore, Mariani *et al.* (2009) conclude that if someone expects to live longer, that person would be keen to invest more in environmental quality and future generations. Also, a healthy person can focus more on her surroundings, including environmental conditions. In fact, it is reasonable to invest in environmental quality if a person expects to live a longer healthy life because every individual would want to have a better quality life and higher

standards. Increased investment in environmental quality eventually will lead to better living conditions and improvement in environmental health. Thus, we expect the following hypotheses:

**Hypothesis 1.** *The higher the level of female school enrollment in a country, the higher is the environmental health of the country.*

**Hypothesis 2.** *The higher the level of female primary school completion in a country, the higher is the environmental health of the country.*

**Hypothesis 3.** *The higher the level of female's progression to secondary school of a country, the higher is the environmental health of the country.*

**Hypothesis 4.** *The higher the share of women employed in the non-agricultural sector of a country, the higher is the environmental health of the country.*

**Hypothesis 5.** *The higher the female's vulnerable employment level, the lower is the environmental health of the country.*

**Hypothesis 6.** *The higher the female labor participation rate of a country, the higher is the environmental health of the country.*

**Hypothesis 7.** *The higher the rate of female unemployment of a country, the lower is the environmental health of the country.*

**Hypothesis 8.** *The higher the proportion of seats held by women in national parliament of a country, the higher is the environmental health of the country.*

**Hypothesis 9.** *The higher the prevalence of HIV in women in a country, the lower is the*

*environmental health of the country.*

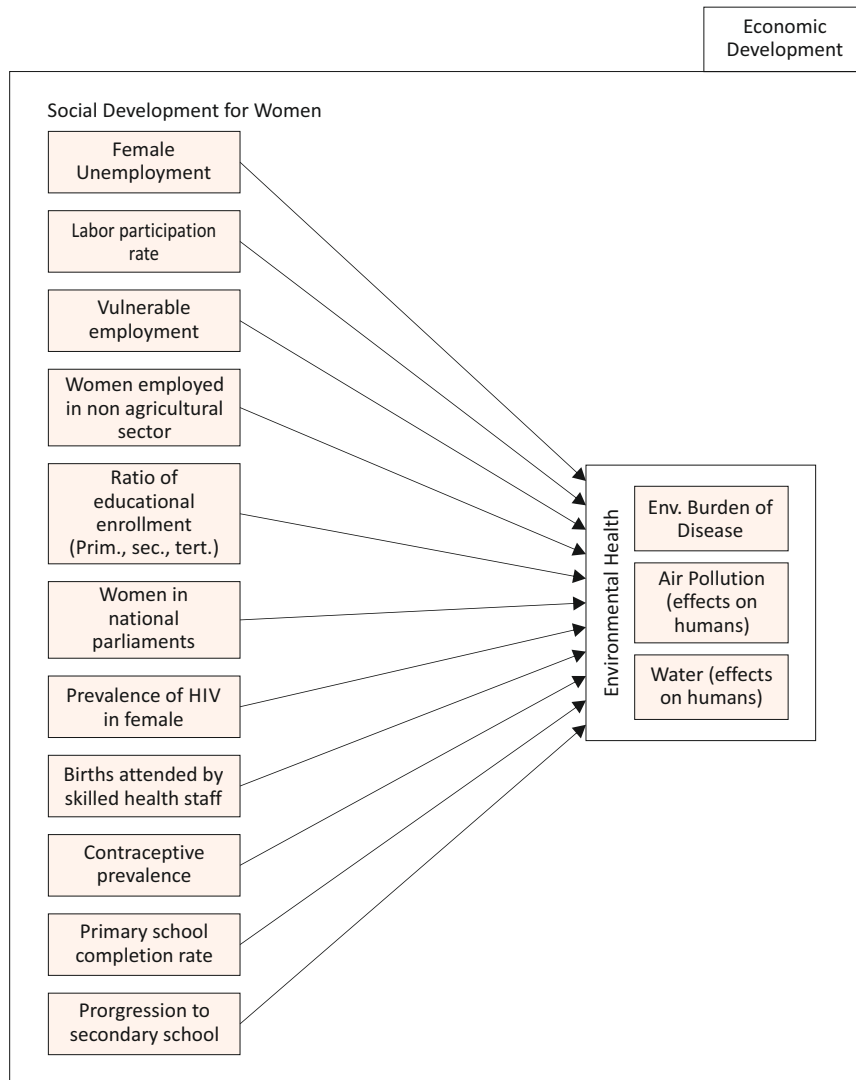
**Hypothesis 10.** *The higher the level of births attended by skilled health staff of a country, the higher the environmental health of the country.*

**Hypothesis 11.** *The higher the level of contraceptive prevalence of a country, the higher is the environmental health of the country.*

## **Methodology**

### **Conceptual model**

On the basis of the section of literature review and hypothesis construction, the framework of this research is illustrated in Figure 1. In this study, we attempt to explore the relationship between women's social development variables and environmental health using economic development as a control variable. We investigate the relationship between women's social development variables and environmental health for high income, upper middle income, lower middle income, and low income countries separately, and lastly, we investigate the effects of women's social development on environmental health for all countries combined.



**Figure 1:** Model: Effects of Social Development for Women on Environmental Health of Countries

## Sample

The research sources were two international databases: the World Bank and the World Economic Forum. The data of environmental performance was taken from the Yale Center for Environmental Law and Policy/Global Leaders of Tomorrow Environmental Task Force of the World Economic Forum. The data of social development for women variables of school enrollment (female-primary, secondary, tertiary), primary school completion rate (female), progression to secondary school (female), share of women employed in the non-agricultural sector, vulnerable employment (female), labor participation rate

(female), unemployment (female), proportion of seats held by women in national parliaments, prevalence of HIV (female), births attended by skilled health staff, contraceptive prevalence were collected from the World Bank (2010). All the data used for the study was from year 2010.

We first obtained country clusters from World Bank (see Table 1) and excluded those countries without social development predictors' data. Finally, we collected the country's Environmental Health index data from World Economic Forum.

**Table 1:** Four country clusters developed from World Bank's (2012) country groupings

High Income Countries	Upper Middle Income Countries	Lower Middle Income Countries	Low Income Countries
Australia	Algeria	Albania	Afghanistan
Austria	Argentina	Armenia	Bangladesh
Bahamas, The	Azerbaijan	Belize	Benin
Barbados	Belarus	Bhutan	Burkina Faso
Belgium	Bosnia and Herzegovina	Bolivia	Burundi
Canada	Botswana	Cameroon	Cambodia
Croatia	Bulgaria	Cape Verde	Central African Republic
Cyprus	Chile	Congo, Rep.	Chad
Czech Republic	China	Djibouti	Comoros
Denmark	Colombia	Egypt, Arab Rep.	Congo, Dem. Rep.
Equatorial Guinea	Costa Rica	El Salvador	Eritrea
Estonia	Cuba	Fiji	Ethiopia
Finland	Dominica	Georgia	Gambia, The
France	Dominican Republic	Ghana	Guinea
Germany	Ecuador	Guatemala	Guinea-Bissau
Greece	Grenada	Guyana	Kenya
Hong Kong SAR, China	Iran, Islamic Rep.	Honduras	Kyrgyz Republic
Hungary	Jamaica	India	Liberia
Iceland	Jordan	Indonesia	Madagascar
Ireland	Kazakhstan	Lao PDR	Malawi
Israel	Latvia	Lesotho	Mali
Italy	Lebanon	Marshall Islands	Mauritania
Japan	Lithuania	Moldova	Mozambique
Korea, Rep.	Macedonia, FYR	Mongolia	Myanmar
Liechtenstein	Malaysia	Morocco	Niger
Luxembourg	Maldives	Nicaragua	Rwanda
Malta	Mauritius	Nigeria	Sierra Leone
Netherlands	Mexico	Pakistan	Tajikistan
New Zealand	Montenegro	Paraguay	Tanzania
Norway	Namibia	Philippines	Togo
Poland	Panama	Samoa	Uganda
Portugal	Peru	Sao Tome and Principe	Zimbabwe
Qatar	Romania	Senegal	
San Marino	Russian Federation	Solomon Islands	
Saudi Arabia	Serbia	Sri Lanka	
Slovak Republic	Seychelles	Sudan	
Slovenia	South Africa	Swaziland	
Spain	St. Lucia	Syrian Arab Republic	
Sweden	Suriname	Timor-Leste	
Switzerland	Thailand	Ukraine	
United Kingdom	Tunisia	Uzbekistan	
United States	Turkey	Vanuatu	
	Uruguay	Vietnam	
	Venezuela, RB	West Bank and Gaza	
		Zambia	

In the research dataset, missing values were replaced with the closest years' averages. If no data was available for a specific variable, the missing value was replaced with the mean value of that variable for all countries in the model.

## Measures

### Dependent variable

Environmental Health: Environmental health, as a dependent variable, was measured by the Environmental Health Performance provided by the Environmental Performance Index (EPI). The EPI was developed by the Yale Center for Environmental Law and Policy (YCELP) and the Center for International Earth Science Information Network (CIESIN) of Columbia University, in collaboration with the World Economic Forum and the Joint Research Centre of the European Commission. The index gives each country scores on two key objectives: (1) Environmental Health and (2) Ecosystem Vitality (EPI, 2010). Environmental Health refers to the extent to which deficiencies in water quality, air pollution, and other factors cause health issues and reduction in quality of life. Ecosystem Vitality measures the health of a country's ecosystem by evaluating such factors as agriculture, biodiversity and habitat, climate change, fisheries, and forestry. The fact that we are interested in the human health consequences related to the environmental conditions, from these two key objectives of the index, we used Environmental Health measures for the purpose of this study.

When measuring the variables, the EPI utilizes a proximity-to-target methodology focused on a core set of environmental outcomes linked to policy goals. The Environmental Performance Index (EPI) in its 2010 report ranked 163 countries on 25 performance indicators that are tracked across ten policy categories

covering both environmental public health and ecosystem vitality. Performance indicators used by EPI provide a general picture in terms of how close countries are in implementing environmental policy goals. In the index, "environmental health" was determined by the human health related variables such as child mortality, indoor air pollution, drinking water, adequate sanitation and urban particulates. Sub-categories of environmental health are given as: (1) Environmental burden of disease (with 25% weight assigned to it), (2) Air pollution effects on humans (12.5%), and (3) Water pollution effects on humans (12.5%). Both air and water indicators are also divided into two different groups; for air, they are indoor and outdoor pollution indicators (each has 6.25% weight), and for water, they are access to water and sanitation (also each has 6.25% weight) (EPI, 2010).

### Independent variables

Social Development for Women: The social development for women variables of school enrollment (female-primary, secondary, tertiary), primary school completion rate (female), progression to secondary school (female), share of women employed in the non-agricultural sector, vulnerable employment (female), labor participation rate (female), unemployment (female), proportion of seats held by women in national parliaments, prevalence of HIV (female), births attended by skilled health staff and contraceptive prevalence were measured using data published by the World Bank (2010) for 163 countries. The World Bank provides 331 indicators from the World Development Indicators (WDI) covering 214 countries from 1960 to 2011 that are widely used by researchers from all disciplines.

School enrollment (female-primary, secondary, tertiary): This variable was calculated by averaging

three indicators - ratio of female-to-male primary enrollment, ratio of female-to-male secondary enrollment, and ratio of female-to-male tertiary enrollment.

- Ratio of female-to-male primary enrollment (%): This is the gender parity index for gross enrolment ratio. According to the World Bank (2010), “Primary is the ratio of female gross enrolment ratio for primary to male gross enrolment ratio for primary. It is calculated by dividing the female value for the indicator by the male value for the indicator.”
- Ratio of female-to-male secondary enrollment (%): This is the gender parity index for gross enrolment ratio. “It is calculated by dividing the female value for the indicator by the male value for the indicator. A GPI [Gender Parity Index] equal to 1 indicates parity between females and males. In general, a value less than 1 indicates disparity in favor of males and a value greater than 1 indicates disparity in favor of females” (WorldBank, 2010).
- Ratio of female-to-male tertiary enrollment (%): This is the gross enrolment ratio for the female population. “Tertiary is the ratio of female gross enrolment ratio for tertiary to male gross enrolment ratio for tertiary. It is calculated by dividing the female value for the indicator by the male value for the indicator. A GPI equal to 1 indicates parity between females and males. In general, a value less than 1 indicates disparity in favor of males and a value greater than 1 indicates disparity in favor of females” (WorldBank, 2010).

Primary completion rate, female (% of relevant age group): The World Bank (2010) provides the definition of this variable as “Female is the total number of new female entrants in the last grade of primary education, regardless of age, expressed as percentage of the total

female population of the theoretical entrance age to the last grade of primary. This indicator is also known as gross intake rate to the last grade of primary. The ratio can exceed 100% due to over-aged and under-aged children who enter primary school late/early and/or repeat grades.”

Progression to secondary school, female (%): This is the transition from primary to secondary school in percentage. “Female is the number of new female entrants to the first grade of secondary education (general programs only) in a given year, expressed as a percentage of the number of female pupils enrolled in the final grade of primary education in the previous year” (WorldBank, 2010).

Share of women employed in the non-agricultural sector (% of total non-agricultural employment): “Share of women employed in the non-agricultural sector is the share of female workers in the nonagricultural sector (industry and services), expressed as a percentage of total employment in the nonagricultural sector. Industry includes mining and quarrying, manufacturing, construction, electricity, gas, and water. Services include wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services” (WorldBank, 2010).

Vulnerable employment, female (% of female employment): This variable defined as “unpaid family workers and own-account workers as a percentage of total employment” by World Bank (2010).

Labor participation rate, female (% of female population ages 15+): “Labor force participation rate is the proportion of the population ages 15 and older

that is economically active: all people who supply labor for the production of goods and services during a specified period.”

Unemployment, female (% of female labor force): “Unemployment refers to the share of the labor force that is without work but available for and seeking employment.”

Proportion of seats held by women in national parliaments (%): “Women in parliaments are the percentage of parliamentary seats in a single or lower chamber held by women.”

Prevalence of HIV, female (% ages 15-24): “Prevalence of HIV is the percentage of people who are infected with HIV. Youth rates are as a percentage of the relevant age group.”

Births attended by skilled health staff (% of total): “Births attended by skilled health staff are the percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period; to conduct deliveries on their own; and to care for newborns.”

Contraceptive prevalence (% of women ages 15-49): “Contraceptive prevalence rate is the percentage of women who are practicing, or whose sexual partners are practicing, any form of contraception. It is usually measured for married women ages 15-49 only” (World Bank, 2010).

## Data Analyses

A summary of descriptive statistics and correlation matrix for the variables of pooled cross-national data are provided in Table 2. There are significant correlations among dependent variable – environmental health – and independent variables including primary school completion rate (female), progression to secondary school (female), share of women employed in the non-agricultural sector, vulnerable employment (female), labor participation rate (female), proportion of seats held by women in national parliaments, prevalence of HIV (female), births attended by skilled health staff, and contraceptive prevalence. Only the unemployment (female) rate did not show a significant correlation with environmental health.

## Statistical results

Tables 3, 4, 5, 6 and 7 show the statistical results of the study. Total environmental health data was used as a dependent variable for all models. The regression analysis of the effects of women's social development on environmental health in high income countries is considered as the first step of the data analysis (Table 3). For this first step, we ran a regression analysis using high income countries' women's social development variables of primary school completion rate (female), progression to secondary school (female), share of women employed in the non-agricultural sector, vulnerable employment (female), labor participation rate (female), unemployment (female), proportion of seats held by women in national parliaments, prevalence of HIV (female), births attended by skilled health staff, and contraceptive prevalence as independent variables and Environmental Health as the dependent variable. To examine the Model 2, we took upper middle income countries' variables of women's social development as independent

variables and ran a regression analysis between them and Environmental Health (Table 4). The next tests were on the effects of women social development variables on Environmental Health for lower high income and low income countries which were also the assessments of Models 3 and 4 (Tables 5 & 6). Finally, the last test was on the effects of women's social development on Environmental Health for all countries combined, which was also the assessment of Model 5 (Table 7).

In Model 1, we examined the high income country cluster implemented from the World Bank and found that the unemployment rate for women showed a correlation with aggregated environmental health measure (Table 3). The overall significance of the Model 1 was 0.000 with an  $R^2$  of 0.833. The significance level for the unemployment rate for women was 0.031.

For regression analysis of Model 2, we took upper middle income countries' social development for women data as independent variables. From these variables, our regression analysis showed a strong correlation between vulnerable employment and HIV prevalence in women, and environmental health total with statistically significant  $p$  values of 0.020 and 0.009 for each variable, respectively. The overall model gave us an  $R^2$  of 0.608 with a level of significance of 0.00 (Table 4).

The third regression analysis was for Model 3. We looked at lower middle income countries' social development for women data as independent variables. Our regression analysis showed a strong correlation between HIV prevalence in women and environmental health total with statistically significant  $p$  value of 0.017. The overall model gave us an  $R^2$  of

0.693 with 0.00 significance (Table 5).

Next, we looked at low income countries with a regression analysis which was examined with Model 4. We looked at low income countries' social development for women data as independent variables. The regression analysis showed a strong correlation between progression to secondary school, vulnerable employment in women population of the countries, and environmental health total with statistically significant  $p$  values of 0.030 and 0.014 for each variable, respectively. The overall model gave us an  $R^2$  of 0.815 with 0.00 significance (Table 6).

The last regression analysis examined the effects of the countries' social development variables for women on Environmental Health for the combined country model which was Model 5 (Table 7). When we added all countries' eleven variables into the model, it gave us slightly different results. The model gave an  $R^2$  value of 0.876 with 0.00 significance. From the independent variables, women's primary school completion, HIV prevalence, vulnerable employment, and contraceptive prevalence rates showed a significant effect on environmental health with significance levels of 0.032 for women's primary school completion, and 0.000 for all other three variables. Thus, *Hypotheses 2, 5, 9, and 11* were supported in Model 5. However, *Hypotheses 1, 3, 4, 6, 7, 8, and 10* were not supported in the combined country model (Model 5), which was analyzed excluding economic development control variable.

The aforementioned regression analyses in this study gave the following results for each variable:

School enrollment for women (primary, secondary, tertiary): The effect of women's primary, secondary, tertiary school enrollment on environmental health



was not significant in any model we examined. Hence, *H1* was not supported.

**Primary school completion for women:** The results of the study did not show any significant effect of primary school completion rate of women on environmental health except in the model that we did not control for economic development. Therefore, we can state that the *H2* was only supported in the Model 5.

**Progression to secondary school:** The statistical analyses showed that when the level of women's progression to secondary school of a country was high, the environmental health of that country was high in particularly low income countries. This result supported the *H3*.

**Share of women employed in the non-agricultural sector:** The results of the study showed that the environmental health of a country was not affected by the share of women employed in the non-agricultural sector of the country. So, the hypothesis *H4* was not supported.

**Vulnerable employment of women:** The fifth variable of social development of women, vulnerable employment, had a significant effect on the environmental health in upper middle and low income countries. In addition, this variable showed a significant effect on environmental health when we combined all countries. Thus, *H5* was supported.

**Labor participation rate:** The effect of women's labor participation on environmental health was not significant in any model. Hence, *H6* was not supported.

**Unemployment rate for women:** As an indicator of women's social development, unemployment for

women showed a significant effect on environmental health of high income countries we examined in Model 1. Thus, *H7* was supported.

**Proportion of seats held by women in national parliaments:** The effect of women's participation in national parliaments on environmental health was not significant in any of the models. Hence, *H8* was not supported.

**Prevalence of HIV in women:** The effect of prevalence of HIV in women on environmental health was significant in three models - upper middle, lower middle income countries, and all countries' combined models. Hence, *H9* was supported.

**Births attended by skilled health staff:** The effect of number of births attended by skilled health staff on environmental health was not significant in any of the models. *H10* was not supported.

**Contraceptive prevalence:** The last indicator of women's social development, contraceptive prevalence, showed a significant effect on environmental health in all countries' combined model that we did not control for economic development. Thus, *H11* was supported.

**TABLE 2: Descriptive statistics and correlation matrix**

Variable	SCHE	PRIM COMP	PROG SEC	NOAG EMPL	VULN EMP	LABR PART	UNEMP	PARL SEAT	HIV	BRTH HLTHS	CONT PRV	ENV. HEALTH	Mean	SD
SCHE	1.000	.568**	.514**	.355*	-.626**	-.141	.066	.014	-.098	.270**	.486**	.575**	103.164	21.636
PRIM COMP		1.000	.598**	.484**	-.600**	-.195*	.011	.036	-.202**	.285**	.683**	.662**	88.100	19.952
PROG SEC			1.000	.483**	-.680**	-.285**	-.059	.041	-.297**	.192*	.618**	.703**	87.556	14.925
NOAG EMPL				1.000	-.571**	.172*	-.016	.308**	-.150	.220**	.524**	.582**	37.393	12.227
VULN EMP					1.000	.355**	-.135	-.157*	.217**	-.289**	-.650**	-.885**	43.808	31.785
LABR PART						1.000	-.356**	.218**	.224**	-.075	-.181*	-.261**	52.947	15.941
UNEMP							1.000	-.128	.184*	.039	-.156*	-.034	11.319	9.514
PARL SEAT								1.000	.048	-.005	.241**	.214**	18.294	10.672
HIV									1.000	-.103	-.210**	-.383**	1.062	2.382
BRTH HLTHS										1.000	.298**	.299**	87.982	75.250
CONT PRV											1.000	.742**	52.980	22.417
ENV. HEALTH												1.000	60.1948	27.156

\*p < 0.05, \*\*p < 0.01, 2-tailed test. N=163

SCHE = School enrollment for women; PRIM COMP = Primary school completion for women; PROG SEC = Progression to secondary school; NOAG EMPL = Share of women employed in the non-agricultural sector; VULN EMP = Vulnerable employment of women; LABR PART = Labor participation rate; UNEMP = Employment rate for women; PARL SEAT = Proportion of seats held by women in national parliaments; HIV = Prevalence of HIV in women; BRTH HLTHS = Births attended by skilled health staff; CONT PRV = Contraceptive prevalence; ENV HEALTH = Environmental Health

Model 1: Regression analysis of the effects of Women's Social Development on Environmental Health for High Income Countries, R2 = 0.833, F Sig. = 0.000

Hypotheses	Standardized Beta	p-Value	Results
H1. School Enrollment → Environmental Health	0.114	0.378	Not Supported
H2. Primary Completion → Environmental Health	0.229	0.145	Not Supported
H3. Progression Second Sch → Environmental Health	-0.150	0.475	Not Supported
H4. Nonagri Employment → Environmental Health	0.176	0.364	Not Supported
H5. Vulnerable Employment → Environmental Health	0.005	0.949	Not Supported
H6. Labor Participation → Environmental Health	-0.080	0.644	Not Supported
H7. Unemployment → Environmental Health	-0.249	0.031	Supported
H8. Parliament Seats → Environmental Health	0.186	0.090	Not Supported
H9. HIV Prevalence → Environmental Health	-1.030	0.070	Not Supported
H10. Births w/ Health Staff → Environmental Health	-0.440	0.399	Not Supported
H11. Contracept Prevalence → Environmental Health	0.048	0.746	Not Supported

**Table 3: Summary of results**

Model 2: Regression analysis of the effects of Women's Social Development on Environmental Health for Upper Middle Income Countries, R2 = 0.608, F Sig. = 0.000

Hypotheses	Standardized Beta	p-Value	Results
H1. School Enrollment → Environmental Health	0.013	0.929	Not Supported
H2. Primary Completion → Environmental Health	0.090	0.478	Not Supported
H3. Progression Second Sch → Environmental Health	0.001	0.995	Not Supported
H4. Nonagri Employment → Environmental Health	0.276	0.251	Not Supported
H5. Vulnerable Employment → Environmental Health	-0.366	0.020	Supported
H6. Labor Participation → Environmental Health	0.415	0.086	Not Supported
H7. Unemployment → Environmental Health	- 0.223	0.192	Not Supported
H8.Parliament Seats → Environmental Health	0.020	0.883	Not Supported
H9. HIV Prevalence → Environmental Health	-0.381	0.009	Supported
H10. Births w/ Health Staff → Environmental Health	0.142	0.237	Not Supported
H11.Contracept Prevalence → Environmental Health	-0.156	0.328	Not Supported

**Table 4:** Summary of results

Model 3: Regression analysis of the effects of Women's Social Development on Environmental Health for Lower Middle Income Countries, R2 = 0.693, F Sig. = 0.000

Hypotheses	Standardized Beta	p-Value	Results
H1. School Enrollment → Environmental Health	0.012	0.934	Not Supported
H2. Primary Completion → Environmental Health	0.195	0.222	Not Supported
H3. Progression Second Sch → Environmental Health	0.153	0.257	Not Supported
H4. Nonagri Employment → Environmental Health	0.122	0.428	Not Supported
H5. Vulnerable Employment → Environmental Health	-0.124	0.468	Not Supported
H6. Labor Participation → Environmental Health	-0.172	0.261	Not Supported
H7. Unemployment → Environmental Health	0.159	0.284	Not Supported
H8.Parliament Seats → Environmental Health	0.047	0.704	Not Supported
H9. HIV Prevalence → Environmental Health	-0.272	0.017	Supported
H10. Births w/ Health Staff → Environmental Health	0.119	0.502	Not Supported
H11.Contracept Prevalence → Environmental Health	0.282	0.061	Not Supported

**Table 5:** Summary of results

Model 4: Regression analysis of the effects of Women's Social Development on Environmental Health for Low Income Countries, R2 = 0.815, F Sig. = 0.000

Hypotheses	Standardized Beta	p-Value	Results
H1. School Enrollment → Environmental Health	-0.034	0.826	Not Supported
H2. Primary Completion → Environmental Health	0.253	0.156	Not Supported
H3. Progression Second Sch → Environmental Health	0.284	0.030	Supported
H4. Nonagri Employment → Environmental Health	-0.073	0.574	Not Supported
H5. Vulnerable Employment → Environmental Health	-0.388	0.014	Supported
H6. Labor Participation → Environmental Health	0.275	0.080	Not Supported
H7. Unemployment → Environmental Health	0.151	0.256	Not Supported
H8. Parliament Seats → Environmental Health	0.166	0.145	Not Supported
H9. HIV Prevalence → Environmental Health	-0.139	0.286	Not Supported
H10. Births w/ Health Staff → Environmental Health	0.088	0.525	Not Supported
H11. Contracept Prevalence → Environmental Health	0.243	0.097	Not Supported

**Table 6:** Summary of results

Model 5: Regression analysis of the effects of Women's Social Development on Environmental Health for All Countries, R2 = 0.876, F Sig. = 0.000

Hypotheses	Standardized Beta	p-Value	Results
H1. School Enrollment → Environmental Health	-0.019	0.645	Not Supported
H2. Primary Completion → Environmental Health	0.096	0.032	Supported
H3. Progression Second Sch → Environmental Health	0.057	0.204	Not Supported
H4. Nonagri Employment → Environmental Health	-0.020	0.647	Not Supported
H5. Vulnerable Employment → Environmental Health	-0.673	0.000	Supported
H6. Labor Participation → Environmental Health	0.062	0.137	Not Supported
H7. Unemployment → Environmental Health	-0.033	0.349	Not Supported
H8. Parliament Seats → Environmental Health	0.058	0.074	Not Supported
H9. HIV Prevalence → Environmental Health	-0.178	0.000	Supported
H10. Births w/ Health Staff → Environmental Health	0.012	0.709	Not Supported
H11. Contracept Prevalence → Environmental Health	0.174	0.000	Supported

**Table 7:** Summary of results

## Discussion And Conclusion

In this study, we examined the impact of women's social development on national environmental health performance. With an empirical application to the year 2010 pooled cross-national data of 163 countries,

results indicated that different variables pertaining to women's social development are salient in countries with different levels of income. For example, while the unemployment rate has negative effects on environmental health of high income countries,

vulnerable employment and HIV prevalence of women have negative effects on environmental health in upper middle income countries. Similarly, HIV prevalence is a significant factor in lower middle income countries. In low income countries, progression to secondary school has a positive effect and vulnerable employment has a negative effect on environmental health of low income countries. However, combining all countries without taking into account the effects of economic development, we found women's primary school completion, vulnerable employment, HIV prevalence, and contraceptive prevalence to be the important factors in affecting environmental health of the countries.

Our assumption that there is an association between women's primary school completion, progression to secondary school, HIV prevalence, vulnerable employment, and contraceptive prevalence, and environmental health was supported by the results of this study. However, the effects of women's primary, secondary, tertiary school enrollment, share of women employed in the non-agricultural sector, labor participation, women's participation in national parliaments, and births attended by skilled health staff on environmental health were not significant in any of the models we examined. These results throw a variety of policy and managerial implications.

For the high income countries, our results showed only one of the women's social development indicators - female unemployment rate - had a direct effect on environmental health. The beta value of - 0.249 explains the negative correlation between these two variables. So, we can state that when the unemployment rate of women in a country is high, one can expect environmental health conditions of that country to be low. Income is associated with exposure to a wide variety of environmental quality indicators in

the ambient environment, at home, in school, on the job, and in one's neighborhood (Evans and Kantrowitz, 2002). Women's empowerment in terms of labor participation can be an important factor to increase earnings. As proved by some studies (e.g., Kawachi and Berkman, 2003; Kling et al., 2004), each incremental rise in income helps individuals to improve their surrounding health related conditions. This result related to high income countries helps us conclude that in these countries, policy makers should pay more attention to increasing employment opportunities for women in order to improve environmental health.

The results of this study also showed that in upper middle income countries, vulnerable employment and HIV prevalence in women affect environmental health significantly. Negative beta values of the relationships for both determinants surfaced an inverse correlation with environmental health. Thus, we can infer that when an upper middle income country has a high vulnerable employment rate as well as high HIV prevalence rate in women, those countries would be more susceptible to environmental health damages. Consequently, improving employment conditions and combating HIV and its detrimental effects on women can be an alternative approach to improve environmental health.

For lower middle income countries, the results confirmed that HIV prevalence in women is the most important determinant of environmental health. HIV prevalence and the potential impacts of the epidemic on environmental health in three of the five regression analyses - upper middle and lower middle income country groups, and all countries combined - highlight the significance of efforts to be undertaken to prevent the disease. Formulating national policies and strategies, and providing high-level advocacy for HIV

prevention and control in women can be important in the countries that are facing environmental health deterioration.

In case of the last country group, the low income country cluster, results illuminated a slightly different picture compared to the other regression analyses. The analyses showed that when the level of women's progression to secondary school was high, the environmental health of that country was also high. This result supported our hypothesis on the effect of women's educational attainment of progressing towards secondary school on environmental health. Environmental scholars supported the idea that higher education institutions occupy a unique position in that they educate and mold the next generation of society's decision-makers (Walton et al., 2000); therefore, formal education is considered critical for achieving environmental and ethical awareness, values, attitudes, skills and behavior (Peng and Lin, 2009). This approach becomes more significant for the female population when we consider the nurturing role played by women in societies. National planning of programs on encouraging women to progress towards secondary school can be an important policy support

to increase, expand and coordinate the empowerment of women in educational attainment, which can be a crucial strategy to improve the environmental health of a nation.

While there is a rapidly increasing interest in undertaking research and explaining the linkages between economic and social development variables and environmental health, many obstacles remain. For instance, some types of environmental degradation have a long latency period, and other degradation occurs on such a scale that it defies foresight and data gathering. Additionally, many risk factors may interact synergistically, making it extremely difficult to predict their effects. Also, many of the international data sources in this area of study are incomplete and require improvements. All these need careful consideration when focusing on potential predictors related to environmental health outcomes. Furthermore, it is possible that the future research considering different time periods and changes over time can help identify a potentially dynamic relationship between social development for women and environmental health. Such dynamic data may show different results regarding this relationship.

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# Institutionalization of Export Promotion in India: An Empirical Study

**Sivakumar Venkataramany  
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## **Abstract**

Export promotion is undertaken by both industrialized and developing economies. Export credit arrangements ensure protection from commercial risks, offer insurance mechanism from illiquidity and insolvency, and also provide cost-effective information. The need for export promotion is more important to transition economies as they may use the

resources for modernization of infrastructure and technology. This paper attempts to assess the viability of the two institutions dedicated to export promotion in India.

**Key words:** Export promotion, India, export credit insurance

## Introduction

The growing trend of exports among developing countries needs promotion, financing and insurance to sustain and realize their export potential through their respective export credit agencies. Firms need assistance in export counseling, marketing and managing their international trade. Almost all countries put in considerable efforts in maintaining their competitive edge in the sectors that receive recognition abroad. India is not only a major member of the BRIC countries but also a leader for several transition economies. The liberalization era has given rise to numerous labor intensive small and medium sized enterprises (SME) that look for export markets for their output. Many SMEs manufacture parts and components that become intermediate products for multinational firms (MNCs) in their production lines. These products may be consumed locally and also be exported. Thus, India's focus is justifiably placed in export promotion through various government agencies and commercial banks. The Export Credit Guarantees Corporation of India (ECGC) and the Export Import Bank of India (EXIM Bank) are two institutions established by the government with the specific objective of export promotion.

India has a memorandum of understanding with the development banks of Brazil, Russia and China. India proposed the concept of an Asian Exim Banks Forum that has forged strong linkage among the members. The International Union of Credit and Investment Insurers (Berne Union) has supported new export business valued at \$1.4 trillion in 2009 through its 44 member institutions. Its short term exposure is at \$770 billion and the international investment insurance has \$150 billion exposure. About 70 percent of Berne Union's exposure is within the OECD countries.

## Literature Review

A discussion of the causes and implications of a growing world trade leads to understanding trade as “an outcome of a process that determines trade flows, world prices, wages and employment” [Krugman 1995]. Home production of certain importable products is promoted under the policy of import substitution whereas export promotion focuses on export of home-produced goods [Laux-Meiselbach 1989]. Scholars in the fields of economics and international business have discussed the merits and limitations of both export promotion and import substitution. While exports may lead to free trade, the incentives for exports come at the expense of other industries. Export promotion oriented policies favor the politically strong firms undermining the weak firms [Higgs 2001]. Imports, not exports, constitute the purpose of trade [Krugman 2001].

The importance of export credit insurance in the financing of international trade is recognized in all industrialized nations, including Canada, Great Britain, Japan, and Australia. The UK has used export credit insurance since 1919 to facilitate British export trade and the concept has been embedded in the country's foreign commercial policy [Dietrich, 1935]. An exporter needs insurance for the accounts receivable(s) against non-payment risk. Export credit insurance is more of a protection against illiquidity rather than a loss due to non-payment [Scafuro, 1960]. Export credit insurance is not in itself a subsidy and the exporters are expected to compete in the international market for their success [Aitken, 1969]. Coface Group, an export credit insurance firm, points out that low capital investment will lead to economic struggles and then to poor rating pointing to default risk. Increasing demand for Chinese equipment and services has

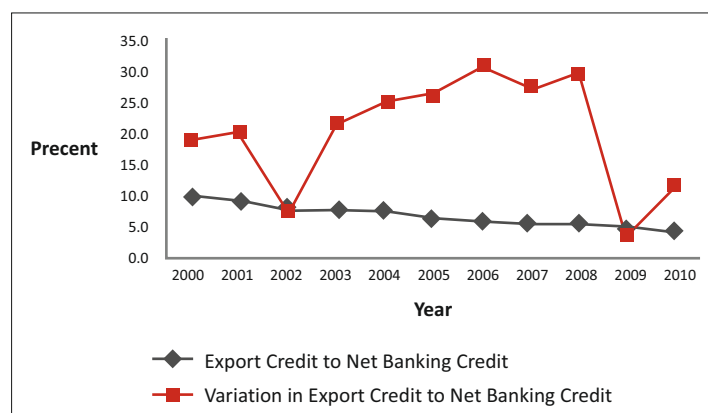
paved the way for limited recourse lending by banks in China whereby China Development Bank Corporation and China's EXIM Bank have a major role to play. Sinasure, China's export credit guarantee agency has offered a new export credit guarantee worth up to \$50 billion as an encouragement to Chinese companies for their investment in infrastructure in Nigeria. The scope of the export credit guarantee will be limited by the inability of the exporter's country to verify the quality of the exports [Garcia, Levine and Marga, 2004]. The cost of export credit insurance becomes volatile with the reserves over imports ratio [Schich, 1997].

The effectiveness of the export promotion institutions is shown to be positive with empirical evidence as exporting firms overcome the hidden cost of political risk [Moser, Nestmann, and Wedow, 2008]. The question whether export insurance is an effort of trade promotion or subsidizing domestic export oriented producers is valid in the context of OECD arrangement and WTO regulations. Availability of export credit insurance helps exporters focus on the product development and manufacture. It boosts the

confidence, offers protection against commercial risks, provides cost-free information on foreign importers, and opens up access to export finance from commercial banks in the form of pre-shipment and post-shipment credit [Stephens, 1996]. Small and medium sized enterprises may overcome all risks and find maximum advantages through export promotion institutions as they will assist in selecting brokers, agents, marketing representatives and export counselors [Barrett, 1990].

### Export Promotion in India

India is prone to a multidimensional approach by its central government in several productive sectors. Export credit is considered a priority for commercial bank credit. Figure 1 illustrates that export credit is just about five percent of the total commercial bank credit and its high degree of volatility is a matter of concern. So, it is important that the country puts in sustained efforts in the field of export promotion. It is facilitated through two apex institutions namely, the Export Credit and Guarantees Corporation (ECGC) and the Export Import Bank of India (EXIM Bank).



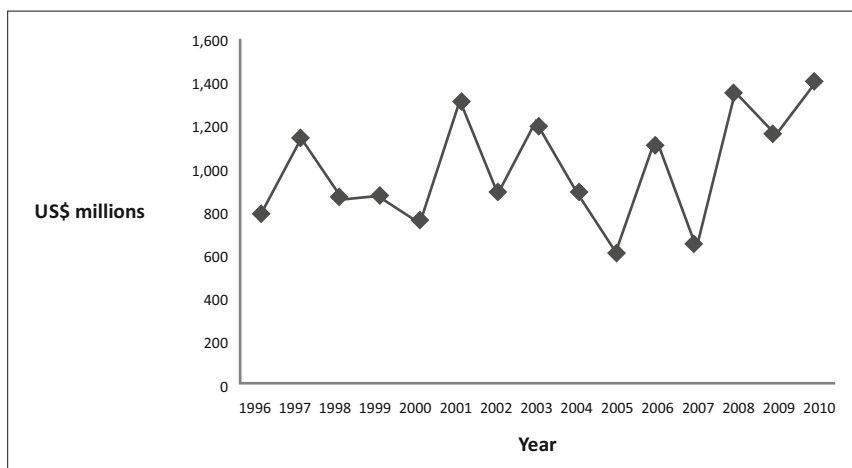
Source: 2011-2012 Budget, Union Ministry of Finance, Government of India

**Figure 1: Comparison of Export Credit to Banking Credit**

The ECGC was established in 1957 by the government of India. Its main role is to provide credit risk insurance, overseas investment insurance and offer guarantees to commercial banks in order to support their credit facilities to exporter-clients. It offers various products to exporters, including factoring, overseas investment guarantee, exchange fluctuations risk cover, buyers policy, post-shipment export credit guarantee, construction works policy, buyer exposure policies, transfer guarantee, export performance guarantee, export finance guarantee, insurance covers for buyer's credit and line of credit, standard policy, export turnover policy, small exporters' policy, packing credit guarantee, and export finance guarantee. Its engineering sector was able to diversify the narrow export base through the Engineering Export Promotion Council (EEPC) set up in 1955.

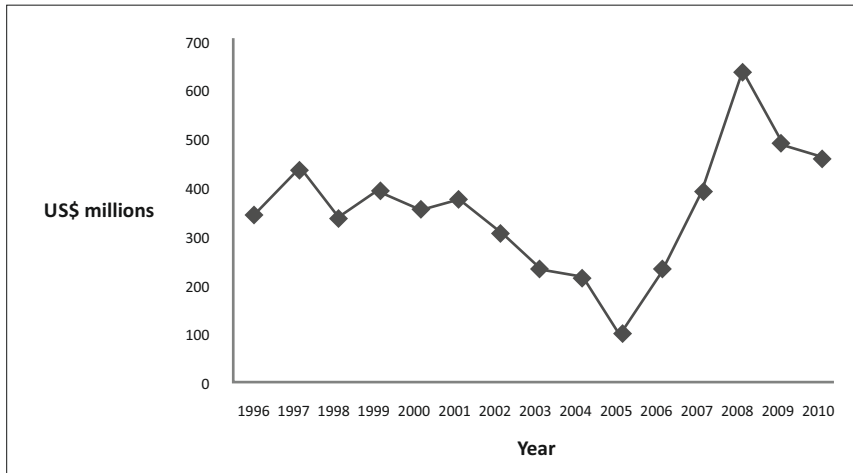
Exim Bank founded in 1982 is India's premier export finance institution. Its goal is to facilitate and promote the country's international trade and assist Indian

firms in their internationalization efforts. The institution offers a comprehensive range of financing, advisory and support programs. As of March 2010, the bank has in place 136 lines of credit (LOCs) covering 94 countries in all continents with credit commitments amounting to US\$ 4.5 billion. The Bank has so far supported 259 overseas ventures by more than 200 companies in 64 countries in diverse sectors, in both industrialized and transition economies. Exim Bank of India has set aside \$11 million in association with the International Trade Center, United States for providing credit assistance to women-owned and labor intensive small-medium enterprises (SMEs) in the rural areas in the country. Export credit works to the benefit of importers in India. Figures 2 and 3 indicate the export credit (principal and interest) support received by Indian importers. The principal amount in the credit facility shows reasonable fluctuations whereas the interest component reaffirms that the low interest rates in the early 2000s is now a thing of a distant past.



Source: India's External Debt as at September 2010, Union Ministry of Finance Government of India

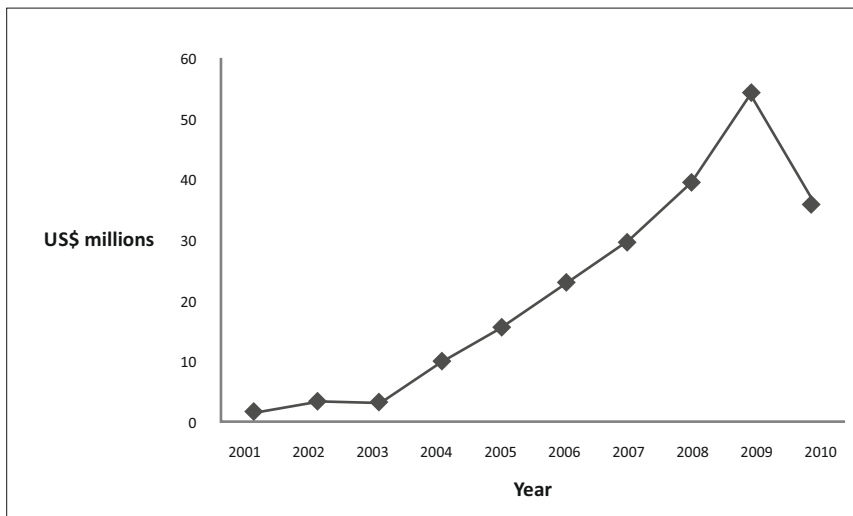
**Figure 2: India's External Debt – Principal Component of Export Credit**



Source: India's External Debt as at September 2010, Union Ministry of Finance Government of India

**Figure 3: India's External Debt – Interest Component of Export Credit**

The surplus registered in the country's service sector in its balance of trade as shown in Figure 4 has helped in the modernization of technology and infrastructure.



Source: 2011-2012 Budget, Union Ministry of Finance, Government of India

**Figure 4: India's Balance of Trade – Services**

## Methodology

We studied the viability of the two institutions, ECGC and the EXIM Bank of India, from 1995 to 2010 through their financials. Our objective was to determine whether these institutions were successful in export promotion. On becoming part of the World Trade Organization (WTO) in 1995, India has had to abide by its regulations and provisions. Our study is based on the data from 1995 to 2010. Since the role of both the institutions is devoted to export promotion, we included the primary international trade variables. The two institutions are committed to overseas investment insurance besides export promotion; similar institutions from other countries are engaged in a similar role. Importers in India are also recipients of credit from foreign exporters and their banks. Therefore, we used the value of total trade (exports plus imports) as the dependent variable for our assessment. The country's productivity is evidenced by its gross domestic product (GDP) and that is expected to shape the quantity and value of exports. The gross national income (GNI) is a factor for consideration of imports. A weak Indian rupee enhances the profitability of the exporters and undermines that of the importers. Thus, the exchange rate plays an important role in all international transactions.

The ECGC collects premiums for its insurance services and honors claims when and where invoked. It continues to make an attempt for recovering the non-payment part from the defaulting businesses. The ECGC is devoted to export promotion and so our first hypothesis is developed as follows:

Hypothesis 1 (ECGC):

Value of trade =  $\alpha$  (constant) +  $\beta_1$  (exchange rate) +  $\beta_2$  (gross domestic product per capita) +  $\beta_3$  (value of business) +  $\beta_4$  (income from premium) +  $\beta_5$  (claims paid) +  $\beta_6$  (recovery made)

The EXIM Bank offers loans and guarantees and the operational success is dependent upon its available resources such as deposits and loans besides capital. Thus, our first hypothesis developed for the ECGC is modified to fit the role of the EXIM Bank as given below:

Hypothesis 1A: (EXIM Bank of India)

Value of trade =  $\alpha$  (constant) +  $\beta_1$  (exchange rate) +  $\beta_2$  (gross domestic product per capita) +  $\beta_3$  (loans disbursed) +  $\beta_4$  (value of loan portfolio) +  $\beta_5$  (guarantees issued) +  $\beta_6$  (value of guarantees portfolio) +  $\beta_6$  (total resources available to the institution)

Our second set of hypotheses for the two institutions is based on the annual changes in gross domestic product, exports and imports for both institutions in addition to their respective business variables in the first set, as shown below:

Hypothesis 2 (ECGC):

Value of trade =  $\alpha$  (constant) +  $\beta_1$  (change in gross domestic product) +  $\beta_2$  (change in exports) +  $\beta_3$  (change in imports) +  $\beta_4$  (value of business) +  $\beta_5$  (income from premium) +  $\beta_6$  (claims paid) +  $\beta_7$  (recovery made)

Hypothesis 2A (EXIM Bank of India):

Value of trade =  $\alpha$  (constant) +  $\beta_1$  (exchange rate) +  $\beta_2$  (change in gross domestic product) +  $\beta_3$  (change in exports) +  $\beta_4$  (change in imports) +  $\beta_5$  (loans disbursed) +  $\beta_6$  (value of loan) +  $\beta_6$  (value of guarantees issued) +  $\beta_7$  (value of guarantees portfolio) +  $\beta_8$  (total resources available to the institution)

Table 1 shows the correlation matrix for select variables and Table 2 summarizes the regression results. We had included a constant in our tests to address macroeconomic variables.

## Discussion of Findings

Our results confirmed the importance of exchange rate for international trade for the transition economy of India. The variable turned out to be significant in all our tests for both institutions. In the case of the ECGC, the three variables of the value of business, income from premiums, and recoveries made bore positive signs in our tests as expected. The negative sign for the claims paid confirms the potential loss and the importance of addressing commercial risks even in a short term. The negative sign in the gross domestic product per capita may denote the lack of productivity

but the variable did not turn out to be significant. It was interesting to notice the same variable registering a positive sign with a high degree of statistical significance in the case of the EXIM Bank. The variables of loans disbursed, value of guarantees portfolio, and loans made turned out to be positive. The variable of guarantees issued had a negative sign with significance indicating the increased risk. The negative sign in the total resources variable and its significance display the need for additional resources for the bank.

**Table 1: Correlation Matrix for Select Variables**

	XRATE	GDPCHG	GDPERCAP	EXPCHG	IMPCHG	TRADE	BUSVALUE	PREMIUM	CLAIMS
XRATE	1.000								
GDPCHG	-0.013	1.000							
GDPERCAP	0.196	0.463	1.000						
EXPCHG	0.034	0.390	0.187	1.000					
IMPCHG	-0.140	0.498	0.407	0.402	1.000				
TRADE	0.412	0.494	0.912**	0.030	0.003	1.000			
BUSVALUE	0.118	0.849**	-0.715**	0.262	0.314	0.708**	1.000		
PREMIUM	0.148	0.608*	0.995**	0.055	0.052	0.974**	0.739**	1.000	
CLAIMS	0.271	0.397	0.612*	-0.007	0.114	0.683**	0.571*	0.73**	1.000
RECOVERY	0.173	0.599*	0.939**	0.010	0.180	0.944**	0.766**	0.581*	0.581
DISBURSE	0.328	0.441	0.991**	-0.020	-0.089	0.984**	0.652*	0.986**	0.721**
LOANS	0.368	0.410	0.991**	-0.048	-0.114	0.976**	0.626*	0.978**	0.733**
GTEEISS	0.190	0.598*	0.935**	0.352	0.413	0.663**	0.710**	0.635*	0.349
GTEEPORT	0.281	0.533*	0.948**	0.144	0.226	0.884**	-0.772**	0.849**	0.492
TOTALRES	0.362	0.365	0.981**	-0.062	-0.106	0.968**	0.583*	0.967**	0.733**

-	RECOVERY	DISBURSE	LOANS	GTEEISS	GTEEPORT	TOTALRES
RECOVERY	1.00					
DISBURSE	0.900**	1.000				
LOANS	0.867**	0.992**	1.000			
GTEEISS	0.727**	0.621*	0.556*	1.000		
GTEEPORT	0.929**	0.839**	0.812*	0.873**	1.000	
TOTALRES	0.849**	0.985**	0.996*	0.530*	0.794**	1.000

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

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

The test of our second hypothesis showed a high significance in the variables of exchange rate, change in the GDP, value of business, income from premiums, and recoveries made for the ECGC. The variables bore similar signs as in the first set of tests. For the EXIM Bank, the signs were consistent with our expectation but the variables did not turn out to be highly significant.

### **Conclusion and Future Direction**

About 90 percent of international trade is dependent upon export finance and export insurance. India has witnessed only a slight decline in its international trade due to the global financial crisis but the world, as a whole, registered a twenty-five percent decline in trade. The lack of credit despite the availability of high liquidity and low interest rates is a major reason for the global trade to register a steep decline in 2009. The economic stimulus provided by many governments is expected to help exporters worldwide recover fully. For example, the EXIM Bank of the US has promised about \$12 billion in credit assistance to exports to emerging markets. The governments of the UK, Japan, Brazil, China, Russia, and Colombia also have taken similar steps in their respective jurisdiction.

Our tests have affirmed the success of both the export promotion institutions in India. Notwithstanding the increase in productivity, a country may be successful in exporting only if it ensures a steady devaluation of its currency [Krugman, 1994]. For developing economies, a weakening currency is a boost to the profitability of the exporters. It is a paradoxical situation when the central banks of the industrialized countries in the triad (the United States, Japan and the European Union) are also engaged in a deliberate attempt to weaken their currencies. However, the exports promoted by the ECGC and EXIM Bank of India equip the policy makers to provide for enhanced infrastructure development and modernization of technology.

We propose to compare the effectiveness of similar institutions from other countries to explain the cumulative benefits of global trade. Regional studies also would be helpful for future research in this context to understand the impact of specific free trade agreements and regional trade agreements. India has added twenty-seven countries more to its list of Focus Market Scheme (MFS) and also has broadened its Market Linked Focus Product Scheme (MLFPS) by the inclusion of a large number of products linked to their markets. The role of these two institutions is certain to be more significant with the proposed trade policy reforms in India.



**Table 2: Regression results for export promotion analysis, 1995-2010**

Dependent Variable: Trade	Model ECGC	Model EXIM Bank	Model ECGC	Model EXIM Bank
Constant	-162,085.165 (-5.554)**	-198,534.096 (-3.563)*	-161,090.532 (-8.992)**	-63,542.390 (-0.917)
Exchange Rate	1773.264 (2.938)*	404.175 (0.559)*	2,110.046 (5.069)*	2,464.788 (1.530)
Gross Domestic Product Per Capita	-69.562 (-0.238)	617.876 (4.360)**		
Business Value	2.677 (0.530)		-0.374 (-2.362)*	
Premium Income	10.350 (1.681)*		2,584.991 (17.514)***	
Claims Paid	-1.184 (-2.960)**		-156.231 (-1.658)	
Recovery Made	3685.138 (4.233)		3,937.404 (9.517)**	
Loans Disbursed		9.657 (0.625)		65.626 (1.769)
Loan Portfolio		26.815 (0.813)*		-2.831 (-0.037)
Guarantees Issued		-136.024 (-2.032)*		-80.875 (-0.647)
Guarantees Portfolio		116.950 (1.928)		174.570 (1.189)
Total Resources		-37.19 (-2.418)*		-13.303 (-0.454)
Change in GDP			-3,017.938 (-2.385)*	-224.825 (-0.047)
Change in Exports			-0.206 (-0.008)	27.180 (0.222)
Change in Imports			620.778 (1.993)	1,112.226 (1.266)
Adjusted R <sup>2</sup>	0.98	0.98	0.98	0.98
Number of observations	14	14	14	14

t-statistics appear in parentheses for each variable;

\* = significant at 90% confidence level

\*\* = significant at 95% confidence level

\*\*\* = significant at 99% confidence level

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# Service Quality in Higher Education: A Comparative Study of Management and Education Institutions

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## **Abstract**

Liberalization of the higher education sector has increased the access of students to institutions of higher learning; students of today are far more informed and have more choices in terms of institutions to pursue their higher studies. In the age of competition, the institutions of higher learning need to understand the customers' (students') perceptions of service quality and identify the gap between their expectations and these perceptions. The paper studies the students' perceptions of service quality in the present educational environment, using the modified service quality (SERVQUAL) instrument to measure

five constructs: tangibles, reliability, responsiveness, assurance, and empathy. The study has been done on 500 students pursuing their post-graduation in management and education streams in 10 institutions located in the north Indian state of Haryana. A significantly negative gap is observed in the expectations and perceptions of the service quality of higher education, indicating a sense of dissatisfaction among the students.

**Key Words:** Higher Education, Students, Service Quality, Gap analysis

## Introduction

Higher education in India has witnessed a sea change in the last decade. From being a subsidized service to the masses, education services are becoming market-oriented with increasing participation of the private sector, especially in the higher education sector. The traditional set-up for imparting higher education, comprising of the colleges, universities and other institutions, is facing stiff competition from the institutions in the private sector. Over the years, inertia has crept into the traditional set-up and despite having the faculty with better qualifications and experience, their systems for service delivery have not responded to the fast pace of change encompassing the education sector. The strategic orientation of the government on the issues concerning higher education has been on increasing access and expansion, equity and inclusion, and, quality and excellence. In practice, this has resulted in additional infrastructure and creating new institutions, without a commensurate development of the systems to deliver better educational services. This has resulted in a mismatch between expected services and the services actually delivered thereby creating a gap. Higher education as a service can be said to be fulfilling the need for learning / acquiring knowledge and providing an intangible benefit (increment in aptitude, professional expertise, skills) produced with the help of a set of tangible (infrastructure) and intangible (faculty expertise and learning) means, where the buyer of the service does not get any ownership. Taking the SERVQUAL framework, the paper studied the service quality perceptions of the students and compared the service quality of the private and public sector institutions.

The biggest expansion in higher education in India has been in the disciplines of engineering & technology, management and education. The increased capacity of

students' intake has been rather too fast and many of the institutions have to compete with each other for student enrolments. They need to build their reputation by providing better services through quality equipment, physical facilities, employees, well-trained faculty, material (brochures or statements) and create a pull in the market. Interestingly, many institutions find that despite doing all these, they are unable to get a sufficient number of students onto their campuses, implying that there is a gap in their perceptions and the students' perceptions of service quality. It is difficult to measure quality in comparison to goods as the specific standards cannot be determined due to involvement of human behaviour. The basis of the measurement was to evaluate the service quality by comparing customer expectation with their perception. The business of education demands new concepts and approaches in order to survive in an increasingly competitive and professional environment. Due to increasing complexity, specialization, competitive nature of the business, the requirement of service marketing has emerged. In the view of the changing needs of customers, a changing world, changing life styles, knowledge explosion, population explosion and technology innovations, there is a need for improvement in quality of services in the educational sector.

Traditionally this sector (education) avoided using even the word-of-mouth marketing; however, they are now seeking better ways to understand the segment and their customer, to ensure the delivery of quality services and to strengthen their positions amid a growing number of competitors. Education is a service industry. It needs to adopt techniques that help measure the quality of services and customer satisfaction. Service quality has become a predominant focus of an advanced organization's

strategic plan. Increasing attention paid to service quality has resulted in more progress and profit in organizations. Higher education possesses all the characteristics of the service industry, i.e., intangible, heterogeneous, inseparability, variability, perishable, and the customer (student) participates in the process. Earlier research on service quality in higher education also often emphasized on the academic aspect more than the administration angle, concentrating on effective course delivery mechanisms and the quality of courses and teaching (Atheeyaman, 1997; Cheng and Tam, 1997; Soutar and McNeil, 1996; Griemel-Fuhrmann and Geyer, 2003). However, there is also an attempt to look upon the administrative side of higher education institutions as done in the study by Kamal and Ramzi (2002), which attempts to measure student perception of registration and academic advising across different faculties and other administrative services to assure positive quality service that compliments the academic.

## Literature Review

There are a number of studies that have successfully applied SERVQUAL to public sector service institutions such as in healthcare (Youseff et al. 1996); information systems (Dyke 1999); local authority (Bryslan and Curry, 2000); education (Broadnurst, 2006; Brown, 2006; Markovic, 2006; Grammil, 2004; LaBay, 2003; Ham, 2003; Wever, 2002; Avdjieva, 2002; Hadikoemoro, 2001; Greiner, 2000; Kerlin, 2000; Lampley, 1999; Long, 1999). SERVQUAL has been used successfully in higher education research. Ham (2003) observed that SERVQUAL has been administered by researchers investigating service quality in various industries including higher education by assessing expectations and perceptions with various determinants of service quality.

Vaz & Mansori (2013) studied the impact of five factors of service quality (responsiveness, reliability, empathy, assurance, tangibility) on students' satisfaction at private universities and colleges and concluded that tangibility has an influence on satisfaction followed by empathy; responsiveness and assurance have a direct and positive effect on students' satisfaction. Annamdevula & Bellamkonda (2012) identified the determinants to evaluate the service quality in the higher education sector and developed a new instrument called HiEdQUAL covering various service dimensions from the stand point of students as primary customers. Khan & Nawaz (2011) found that there was a significant relationship between dimensions of service quality i.e. Reliability, Assurance Responsiveness and Empathy, with satisfaction; however the fifth factor, Tangibility, had an insignificant relationship with student satisfaction. It was also observed that higher the level of students' satisfaction greater was their willingness to put more efforts towards their studies. Shekarchizadeh et al., (2011) assessed the service quality perceptions and expectations of international postgraduate students studying in selected Malaysian universities through a gap analysis based on a modified SERVQUAL instrument and five factors in the form of professionalism, reliability, hospitality, tangibles, and commitment were identified. A similar kind of study was conducted by Barnes, (2010) using a modified SERVQUAL instrument to investigate expectations and perceptions of service quality among a sample of post-graduate Chinese students at a leading business and management school in the UK. The research findings suggest that the instrument was suitable for use in a Chinese and post-graduate context.

Katarne and Sharma, (2010) in their study titled, "Measurement of Service Quality of an Automobile Service Centre" examined and measured the current service quality level of an automobile service centre.

Service quality level depends on satisfaction /dissatisfaction of the customers. Dissatisfaction may be caused by various reasons. The reason(s) may be on all dimensions of the SERVQUAL model. They have tried to focus on two-fold objectives; first, to find out the most influencing factor of dissatisfaction, and second, to suggest the best possible solution for the root cause of dissatisfaction. In this study, satisfaction/dissatisfaction of the customer was measured using standard statistical tools, and an attempt was made to find out reason(s) of dissatisfaction by applying root cause analysis. Current performance of the service centre was not found to be up to the mark. Necessary suggestions were made and the service centre started executing them to improve the current service quality level. In another study, Ilhaamie, (2010) tried to identify the most important dimension and to examine the level of service quality, expectation and perception of the external customers towards the Malaysian public services. It was found that the factor of tangibility was the most important dimension. It also had the lowest scores in the factor of perception. On the other hand, service quality gap is neither the lowest nor the highest. Finally, these external customers had the highest expectation on the reliability of the Malaysian public service. Butt and de Run, (2009) identified the service quality components using SERVQUAL in private healthcare sector in Malaysia and observed a negative quality gap in service quality dimensions. The scale development analysis yielded excellent results, which can be used in wider health care policy and practice. Siadat, (2008) stated that service quality is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in both defining and measuring it with no overall consensus emerging on either. Customer satisfaction and service quality are often treated together as functions of the customer's perceptions and expectations, and research has shown that high service quality

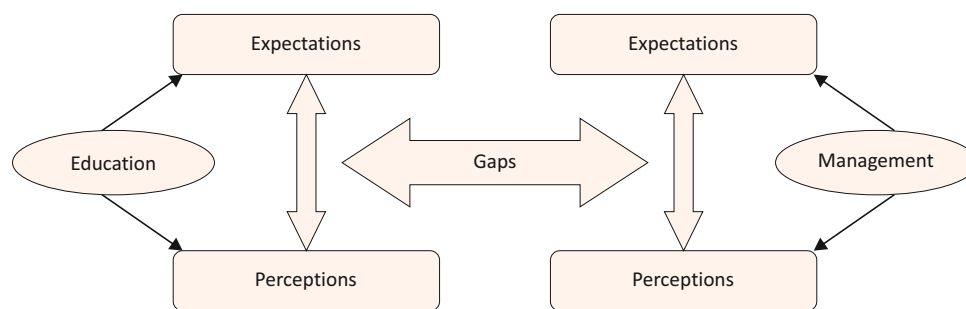
contributes significantly to profitability. This study also examined the service quality gap by comparing customers' expectations and their actual perceptions. Tahir and Bakar, (2007) in their study titled "Service Quality Gap and Customers' Satisfactions of commercial Banks in Malaysia" identified that commercial banks play a significant role in the economy, making up one of the biggest providers of services in the Malaysian economy. Hence, providing better service quality is vital as banks have to compete for customers. A descriptive statistical analysis (mean and paired t-test) was used to evaluate the level of service quality of Malaysia's commercial banks from the customers' perspective. This study examined the service quality gap by comparing customers' expectations and their actual perceptions. In addition, this study focused on their satisfaction towards the service provided by commercial banks. The results of the study indicated that the overall service quality provided by the commercial banks was below customers' expectations. Responsiveness was rated as the most important dimension followed by reliability, tangibility, assurance, and empathy. Further, the findings concluded that customers were slightly satisfied with the overall service quality of the banks.

There have been similar kinds of studies conducted by various researchers for assessing the service quality of the education sector. Some of these studies have been done by Yan (2009), Aghamolaei et al. (2008), Sunanto et al. (2007), Harris (2001), Sarafidou (1994), etc. However, there are very few studies conducted in the higher education service sector in India from the service quality components' point of view. The present study analyses the customers' (students') perceptions and satisfaction regarding the service quality of the colleges of education and management institutes of North Haryana (India).

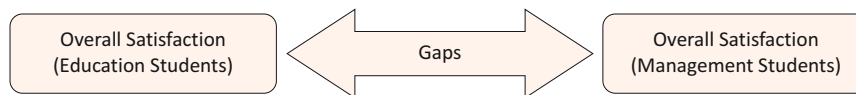
## Objectives of the Study

1. To identify the gaps between expected services and perceptions about actually received service quality in educational services in the Indian context.
2. To study the gaps in expected and delivered service quality of the education colleges and management institutes.
3. To find out the difference in the overall satisfaction of the students of the education colleges and management institutes about the service quality provided by their institute.

The above objectives have been conceptualized in the form of the following models:



Model I: Gap-Analysis on the basis of SERVQUAL Components



Model 2: Gaps between the Overall Satisfaction of Education and Management Students

## Research Methodology

The scope of the present study was limited to the north Indian state of Haryana and an exploratory research design was used for the study. The universe of the study is the students of Haryana, pursuing their higher education degrees in the disciplines of management and education.

## Sampling

Out of about 200 management institutions and 450 education institutions located in Haryana, a sample of 5 colleges from each of these two disciplines were selected on convenience in terms of willingness to participate in the survey. From each of the institutions,

50 students were chosen randomly, making the total sample size of 500.

## Tools for data collection

With the purpose of measuring satisfaction with respect to different aspects of service quality, a modified questionnaire was prepared with the help of a standardized instrument developed by Parasuraman, Ziethaml and Berry in 1998. The instrument was called SERVQUAL. SERVQUAL is applicable to all service industries. The SERVQUAL scale includes five dimensions. They are:

- Tangibles (appearance of physical elements)
- Reliability (dependable, accurate performance)

- Responsiveness (promptness and helpfulness)
- Assurance (competence, courtesy, credibility and security)
- Empathy (easy access, good communication and customer understanding)

### Data Collection

Self-administered questionnaires were distributed in the form of a survey and completed by the respondents of 10 institutes (5 colleges of education and 5 management institutes). The data collection was completed with assistance from faculty from the institutions.

### Statistical Analysis

Descriptive analysis was done by computing the mean, standard deviation percentages and cross-tabulation of scores of the variables of the study. The differences between the variables of perceptions were found out with the help of t-test.

### Results and Discussion

The analysis started with descriptive analysis followed by cross tabulation analysis. After that, the 't-test' was employed to assess the significance of the gaps based on all of the 45 items of the modified SERVQUAL.

The results showed (Table 1) that all of the items and constructs measuring the gaps are significantly negative with empathy representing the construct with the highest gap (-0.92), followed by responsiveness (-0.77), reliability (-0.76), tangibles (-0.76) and assurance (-0.69). The same kind of pattern of gaps was observed in Table 2 showing gap-scores of the students of education colleges and management institutes.

**Table 1: Dimension-wise Service Gap-Analysis**

Sr. No.	Dimensions	Expectation Average	Perception Average	Gaps
1.	Tangibles	4.48	3.72	-0.76
2.	Assurance	4.51	3.82	-0.69
3.	Reliability	4.59	3.83	-0.76
4.	Responsiveness	4.48	3.72	-0.77
5.	Empathy	4.49	3.57	-0.92



**Table 2: Mean Gaps Scores of Education Colleges and Management Institutes**

Type of Institute	Education Colleges			Management Institutes		
	Expectation	Perception	Gaps	Expectation	Perception	Gaps
Tangibles	4.54	3.77	-0.77	4.41	3.72	-0.69
Assurance	4.56	3.89	-0.67	4.45	3.79	-0.66
Reliability	4.65	3.95	-0.70	4.52	3.75	-0.77
Responsiveness	4.55	3.85	-0.70	4.43	3.65	-0.78
Empathy	4.59	3.64	-0.95	4.39	3.56	-0.83
Total	4.58	3.82	-0.76	4.43	3.70	-0.73

These negative gaps indicate that the students' perceptions' scores are less than their expectation scores i.e. students are expecting more from their institutes' services than they are getting in reality; which implies those institutes (service providers) are lacking in their service quality standards.

As observed from Table 1, all the means of expectations are greater than the means of perceptions implying that all the mean gaps for the 45

items are negative. The biggest gap is for items: "Up-to-datedness of softwares used in computers" and "Access to the Internet/e-mails" with a score of -1.13 for the dimension of tangibles. In addition, the difference of means for the five dimensions ranges from -0.69 to -0.92, implying that there are gaps in all dimensions of service quality. However, the mean difference for the dimension of empathy is the biggest gap (-0.92).

**Table 3: Difference between Expectation and Perception scores of students**

Type of Response	Number of Students	Mean scores	S.D	t-value
Expectation Scores	446	202.64	15.32	t=23.63*
Perception Scores	446	168.07	26.83	

\* Significant at 0.05 level of significance and 0.01 level of significance.

Table 3 shows that the mean scores of all the students (education and management) on expectations is 202.64 and perception is 168.07. The calculated value of t-test between the mean scores of expectations and perceptions is 23.63. The calculated t-value is greater than the tabulated value at both the levels of significance. It means that there is a significant difference between the expectations and perceptions

of the students about service quality components. So, the (H0) Null hypothesis is rejected at both the levels. This implies that there exists a significant difference between the expectations and perceptions of the students about the service quality provided by the institutions.

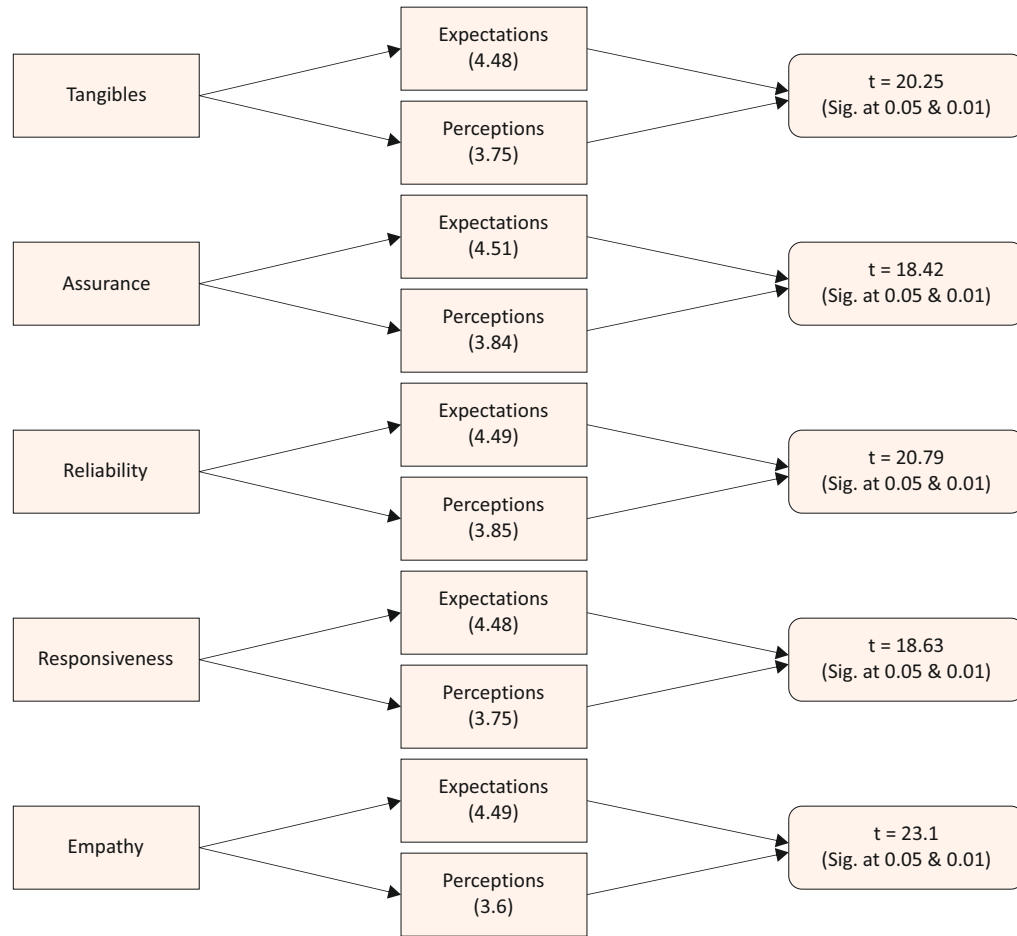
Interestingly, these findings are in line with results of

Rasli et al. (2012) who came out with the findings that Malaysian students also had negative perceptions of quality and expressed dissatisfaction with the services rendered in the university. The findings of the present study are in agreement with the results of the studies

conducted earlier by Sunanto et.al. (2007), Aghamolaei et.al. (2008) and Yan (2009) who also identified negative gaps between the perceptions and expectations of the students from their educational institutes on SERVQUAL components.

**Table 4: Differences between SERVQUAL Components**

Sr. No.	Dimensions	Type of Scores	N	Mean Scores	S.D	S.Ed.	't-value'
1	Tangibles	Expectation	446	71.60	6.72	0.59	20.25
		Perception	446	59.58	10.6		
2	Assurance	Expectation	446	40.56	3.82	0.33	18.42
		Perception	446	34.37	5.98		
3	Reliability	Expectation	446	32.16	2.69	0.26	20.79
		Perception	446	26.83	4.70		
4	Responsiveness	Expectation	446	26.85	2.58	0.24	18.63
		Perception	446	22.29	4.48		
5	Empathy	Expectation	446	31.46	3.19	0.28	23.1
		Perception	446	25	4.97		
	Total	Expectation	446	202.64	15.32	1.46	23.63
		Perception	446	168.07	26.83		



**Exhibit I: Significant Differences between Perceptions and Expectations**

Table 4 shows that the mean scores of all the students (education and management) on expectations and perceptions are significantly different on all components. The calculated values of t-test between the mean scores of expectations and perceptions on each service quality component come out to be greater than table-values at both levels of significance. It means that there exist significant differences between expectations and perceptions.

**Table 5: Difference between the gap scores of the students of colleges of education and management institutes**

Type of students	Number	Mean (Gap scores)	S.D	t-value
Education	232	34.09	25.34	t=0.35*
Management	214	35.1	34.27	
Total	446			

\*Insignificant at 0.05 level of significance and 0.01 level of significance.

As shown in Table 5 the mean gap scores of the students of education colleges are 34.09 and management institutes are 35.1, implying that the education colleges have larger mean-gap scores than management institutes. The calculated values of t-test between the gap-mean scores of the two groups come out to be 0.35. The calculated t-value is less than the tabulated value at 5% (0.05) level of significance = 1.96 and 1% (0.01) level of significance = 2.58. So, the value of critical ratio is insignificant at 5% and 1% level of significance. That means, there exists no significant difference between the gap scores of the students of education colleges and management institutes.

It is observed from Table 4 that the mean scores of students of education colleges and management institutes on overall satisfaction are 26.88 and 23.54

respectively. The calculated values of t-test between the mean scores of students from both institutes came out to be 5.66. The calculated t-value is greater than the tabulated value at both the levels of significance. It means that there exists a significant difference between students of both institutes on overall satisfaction from the service quality provided by their institutes. This implies that the students of education colleges are more satisfied as compared to students studying in management institutes. The reason behind this may be that education colleges provide better service quality standards as per students' expectations than management institutes. It may be due to the fact that management students have greater expectations from their institutes which those institutes are unable to fulfil.

**Table 6: Difference between the satisfaction scores of the students of education colleges and management institutes**

Type of students	Number	Mean (Satisfaction scores)	S.D	t-value (Critical Ratio)
Education (B.Ed.)	232	26.88	5.06	t=5.66*
Management (MBA)	214	23.54	7.14	
Total	446			

\*Significant at 0.05 level of significance and 0.01 level of significance.

## Conclusions

Increased access to institutions of higher learning combined with a larger number of such institutions has given students more options which results in them evaluating these institutions minutely before taking admission. Students are well-informed and ambitious, and they expect their educational institutions to provide them education service of outstanding quality.

However, institutes providing higher education in India have not kept pace in terms of service quality and in all parameters, the actual service delivered by them falls short of the expectations of the students. Management students are more ambitious and better informed than those studying in education colleges and hence, have higher expectations from their institutions, and accordingly, the gap between their

expectations and perceived service quality is greater than their counterparts in the education colleges. Of the dimensions of service quality, most of the students perceive that their institutions lack in terms of empathy and reliability of service. There is a gap in the form of emotional connect between the students and their institutions, as has been the tradition in the Indian education sector. A similar gap of high magnitude exists in reliability of service, primarily because of the high turnover of the faculty in these institutions. The direction of this gap between the perceptions and expectations of all the dimensions of service quality is negative, implying a sense of dissatisfaction among the students. Higher education institutions need a well-developed, comprehensive marketing strategy that is carefully communicated throughout the institution and the target market also. The service marketing mix and service quality components will help higher education institutions to shape their service offerings according to the needs of their students.

### **Implications**

The study has implications for entrepreneurs in the education industry, who need to understand that the institutions are built by the infrastructure, faculty and

the systems that integrate the resource and derive value out of them. The present focus on infrastructure needs to shift to other components of service quality and if these institutions have to survive, they cannot continue to give precedence to economic gain over students' satisfaction from their services. The transition from the traditional mindset towards education, to a market-led approach to delivering education needs a second generation approach; otherwise the forthcoming globalization of education can become challenging for these institutes. For the regulators, the study suggests that their evaluation and accreditation of the institutions of higher education must not be confined to the physical infrastructure. They must help and regulate the private sector to build the systems that can deliver better services to the aspirants of higher learning.

### **Further Research**

A researcher aspiring to work in this area can look for possible market positioning strategies on the basis of service quality of the institutions of higher education. Behavioural prediction studies, modelling students' perceptions and the consequent behavioural outcomes could be another interesting extension of the study.

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# Leveraging Cloud - Based Information Technologies for Organizational Agility: A Conceptual Model

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## Abstract

Chief Information Officers have always struggled to implement right Information Technology (IT) solutions aligned with business strategy, with speed. The challenges of doing the same include upfront costs and skills required to implement the project. The organizations which are able to do the same stay one step ahead of their competition. Hence, IT organizations are always engaged in understanding and addressing the needs of employees and providing solutions for the same. The ubiquitous Internet has helped them to address the need of reach and availability of such systems. The emergence of cloud-based services in the form of Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) has added to the panoply

of new options for deriving cost-effective benefits from technology in a flexible and faster way. Adoption of cloud-based services provides IT resources agility to an organization which is further defined in terms of pricing, scalability, availability, security and on-demand provisioning of services, etc. This research paper develops a theoretical model for understanding various factors influencing the decision to adopt cloud-based services. Further, this paper explores whether adoption of cloud-based services helps in achieving organizational agility measured through service agility, market capitalizing agility, and customer agility.

**Key words:** Cloud Computing, Organizational Agility, Adoption

## Introduction

The business environment today is characterized as Volatile, Uncertain, Complex and Ambiguous (VUCA). In such an environment, the capability to sense and respond to market threats and opportunities with speed and surprise has become essential for survival of organizations (Pan, Pan, Chen, & Hsieh, 2007). In such a fast-paced and often changing business environment, firms achieve sustainable competitive advantage by engaging in rapid and relentless innovation for seizing market opportunities. Therefore, continuous innovations in products and services and vigilance to emerging opportunities and threats are vital for superior performance. Organizations which have developed ability to detect opportunities for innovation and seize those competitive market opportunities by assembling requisite assets, knowledge and relationships with speed and surprise, would be ahead of other organizations which have not been able to develop such capabilities. Such organizations with sensing and responding capabilities are the ones that have understood the role of agility in addressing the opportunities and threats with speed and surprise. Agility has increasingly become indispensable for survival and prosperity for organizations. Given its significant role in a turbulent business environment, agility has garnered considerable research attention over the past few years (Huang, Ouyang, Pan, & Chou, 2012).

The ubiquitous nature of Information and Communication Technology (ICT) and leveraging information technology (IT) to derive competitive advantage is emerging as a top priority for firms as they often enable an organization to be a marketplace differentiator (Huang, Ouyang, Pan, & Chou, 2012; Liu, Ke, Wei, & Hua, 2013). Further, it is the IT vendors who have made it their key strategy to help organizations

achieve agility (e.g. IBM's 'On-Demand' vision and HP's 'Adaptive Enterprise' strategy). These vendors provide a variety of organizational and technical solutions that would help achieve the proper level of agility to handle unexpected waves of change.

Use and deployment of emerging and new-age technologies like cloud-based services to scale and optimize operations is now de rigueur in today's competitive business and globalised environment. Cloud computing is becoming an adoptable technology for many of the organizations with its dynamic scalability and usage of virtualized resources as a service through the Internet (Ercan, 2010). Cloud-based services enable organizations to hire any software application only when there is a requirement of such a utility. The licensing for using this kind of application may be with a single user or it can be shared with multiple users, and offers a simple and economic way to have proper software facilities with a minimum of expenses (Limbășan & Rusu, 2011).

A key differentiating element of cloud-based service is its ability to become a true, valuable, and economical contributor to organizational agility. Cloud-based services provide agility in terms of faster adoption of IT services, in terms of reduced information technology overhead for the organization, greater pricing flexibility, on-demand services, scalability etc. (Vouk, 2008). Thus, adoption of cloud-based services results in achieving organizational agility in terms of reaching out to customers and providing them services within no time.

Given its crucial role in enabling business success, the concept of agility has garnered considerable research attention (Huang et al., 2012). Over the years, many dimensions of agility (e.g. manufacturing agility,

operational agility, customer agility) have been identified and researched (e.g., Braunscheidel & Suresh, 2009; Huang et al., 2012; Ngai, Chau, & Chan, 2011; Raschke, 2010; Sambamurthy, Bharadwaj, & Grover, 2003). Past research generally has asserted that IT can enable agility by speeding up decision making, facilitating communication, and responding quickly to changing conditions (Lu & Ramamurthy, 2011). IT improves operational and management competencies in enterprise systems (Ngai et al., 2011) and helps in achieving competitive advantage by improving interaction with customers (Roberts & Grover, 2012). However, past research has also suggested that IT may obstruct and at times even delay organizational agility (Lucas Jr. & Olson, 1994; Lu & Ramamurthy, 2011; Overby, Bharadwaj, & Sambamurthy, 2006).

The emergence of the phenomenon commonly known as cloud computing represents a fundamental change in the way information technology (IT) services are invented, developed, deployed, scaled, updated, maintained and paid for (Böhm, Leimeister, Riedl, & Krcmar, 2010). Cloud computing is viewed as one of the most promising technologies in computing today, inherently able to address a number of issues such as scalability of IT resources where a service can easily be scaled up or ramped down for optimum utilization giving customers an option to pay only for services they have used (Leavitt, 2009; Lin & Chen, 2012; Vaquero, Rodero-Merino, Caceres, & Lindner, 2008). Yet, despite the growing body of research on cloud-based services adoption and organizational agility, how to achieve agility through cloud-based services is still not answered by previous research. Given the indispensable role of agility in VUCA business environments, it is imperative to investigate how cloud-based services can help organizations in

achieving agility.

The objective of this research is -

- 1) To identify the factors that impact adoption of cloud-based services.
- 2) To study the impact of adoption of cloud-based services on organizational agility.

The remaining sections of this paper discuss the theoretical underpinnings of cloud-based services, agility and understanding of how cloud-based services provide a transformational platform to enable business processes (Raschke, 2010). This is followed by a discussion of the theoretical model and propositions.

## Literature Review

### Agility

The business environment today is dominated by change and uncertainty. Agility is the capability and the capacity to anticipate market dynamics, adapt to them and accelerate the changes faster than the rate in the rest of the market to create economic value and help the organization in performance (Gray, 2010; Goodhue, Chen, Claude, Davis, & Cochran, 2009; Overby et al., 2006). Goldman et al. (1995) represented four dimensions of agility which are enriching the customer, co-operation to enhance competitiveness, organizing to master change and uncertainty, and leveraging the impact of people and information. Agility is defined as the comprehensive response to business challenges resulting from rapidly changing and continually fragmenting markets to achieve high quality and high performing customer-configured goods and services (Goldman, Nagel, & Preiss, 1995). According to Advanced Research Programs Agency (ARPA), "agility is the ability to thrive in an environment of continuous and often unanticipated change" (Sarkis, 2001). It also facilitates the

identification of innovative responses by coalescing requisite assets and knowledge capabilities to deal with unexpected changes resulting in growth and prosperity.

The origin of agility as a business concept lies in flexible manufacturing paradigm and it is further adopted by IT organizations for agile software development. Flexibility is usually hardwired into an organization's processes and IT systems in order to address changes that are largely predictable with a predetermined response. It helps an organization to handle unstructured changes and encompasses searching and leveraging of opportunities for market arbitrage. Changing the parameters in an ERP package to accommodate for the occurrence of a predictable change is a good example of this. Volberda (1996) addresses flexibility as the ability to activate and control the variety of actual and potential capabilities of an organization thereby improving the controllability of the organization.

Agility is needed when the required changes were not envisioned at the time of establishing organizational processes and systems (van Oosterhout et al., 2006). As a result, more radical and innovative change is required such as modularizing or re-engineering existing processes and systems, and the ability to design new processes and implement them through the existing systems. Business agility implies being able to swiftly change business and business processes beyond the normal level of flexibility to effectively manage unpredictable external and internal changes. Agility encompasses a firm's capabilities related to interactions with customers, orchestration of internal operations, and utilization of its ecosystem of external business partners. Further, agility underlines a firm's success in continually enhancing and redefining its

value creation, and competitive performance through innovations in products, services, channels, and market segmentation (Sambamurthy et al., 2003).

### **Cloud-Based Services and Their Role in Achieving Organizational Agility**

Cloud computing, with the revolutionary promise of computing as a utility, has the potential to transform how IT services are delivered and managed. Cloud-based services can be categorized on the basis of applications they provide. We can have Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), and Infrastructure-as-a-Service (IaaS). Software-as-a-Service (SaaS) is a software deployment model where applications are remotely hosted by the application or service provider and made available to customers on demand, over the internet (e.g. Salesforce.com). Platform-as-a-Service (PaaS) allows for the creation and deployment of applications and services, and includes the infrastructure to host the built applications. PaaS level provides a higher level of abstraction that allows developers to build applications without worrying about computer processes. It facilitates the quick roll-out and/or modification of operating system features (e.g. Google AppEngine, Force.com, and Microsoft's Azure). Infrastructure-as-a-Service (IaaS) refers to hardware for hire, in terms of servers, storage capacity, and network bandwidth, with the application and maintenance of that application layer remaining the responsibility of the customer (e.g. Amazon EC2, GoGrid, and Flexiscale).

Considering the way adoption of cloud-based services can revolutionize the business scenario, some research work has been done in this field. The literature suggests several factors that play an important role in using cloud-based services in an

organization. Some surveys related to cloud-based services have enhanced our understanding of the factors involved in adoption of cloud computing. Misra & Mondal (2011) viewed adoption of cloud-based services from the perspective of cost, and developed the ROI model taking into consideration various intangible impacts. There are a few studies such as Kondo, Javadi, Malecot, Cappello, & Anderson (2009) which discuss cloud computing versus desktop computing and identify that start-up cost of cloud computing may be higher but the pay-per-use cost model reduces monthly expenses by at least an order of magnitude. Trust, top management support, firm size, technology readiness, competitive pressure and trading partner pressure are some of the factors affecting the adoption of cloud based services (Low, Chen, & Wu, 2011; Wu, Lan, & Lee, 2011). On the other hand, concern about data security is the factor most frequently cited as discouraging the use of cloud-based services. Subashini & Kavitha (2011) pointed out that some key security elements should be considered, including data security, network security, data locality, data integrity, data segregation, data access, authentication and authorization, data confidentiality, web application security, data breaches, virtualization vulnerability, availability, backup as well as identity management and sign in process. Studies suggest benefits of cloud-based services outweigh these concerns.

Cloud-based services result in improving organizational flexibility and agility (Sultan, 2010). First, it helps in adoption agility of the IT resources including infrastructure, services and access to tools. It helps IT managers to access all these at a click and many times, experience the same through free trials thereby allowing managers to access and use the right IT resources. Thus, sensing and responding to business

changes and facilitating the same through seizing and using cloud-based services provide flexibility to managers to respond with speed and surprise.

The salient characteristics of cloud computing based on the definitions provided by the National Institute of Standards and Terminology (NIST) are on-demand unlimited variety of self-service, broad network access, resource pooling, rapid elasticity, and measured services (Mell & Grance, 2011). These characteristics of cloud-based services help organizations in improving business agility. With the help of cloud-based services, an organization can reduce lead time for introduction of new products or services resulting in market capitalization agility. On the other hand, operational agility can be achieved through cloud-based services as they can be easily scaled up or down for meeting the fluctuating demand of customer workload. The servers are virtualized to provide agility and flexibility. Cloud computing completely changes the way developers deploy their applications. Instead of spending big with their own data centres or managed hosting companies or co-location services and then hiring operations staff to get it going, enterprises can just go to Amazon Web Services or one of the other cloud service providers, get a virtual server running in minutes and pay only for the resources they use. This dynamic allocation enabled by cloud also reduces the cost as organizations can select flexible payment models.

### **Theoretical foundation**

The choice of whether to adopt cloud-based services in an organization is similar to an IT outsourcing decision, with some variations related to additional concerns and benefits which makes the adoption decision a bit more complicated (Nuseibeh, 2011). We are looking at the adoption decision from two

perspectives, namely, adopting new technology and cloud computing as a service. Specifically, we draw on the literature of Technology Acceptance Model (TAM), Diffusion of Innovation (DOI), Technology Organization and Environment (TOE) framework, and Technology-Task Fit theory to investigate the drivers of adoption of cloud-based services.

### **Technology Acceptance Model**

The original version of Technology Acceptance Model (TAM) was proposed by (Davis, 1985). TAM theorizes that an individual's behavioural intention to use a system is determined by two factors: perceived usefulness (PU), defined as the extent to which a person believes that using the system will enhance his or her performance, and perceived ease of use (PEOU), defined as the extent to which a person believes that using a system will be free from effort (Venkatesh & Davis, 2000). The decision to adopt cloud computing, which is basically a web-based service, depends a lot on technology acceptance by the user. The user in this case is the IT manager and not the end user who has to analyze the cloud based services in terms of their usefulness. Further, as these services have reliability and graphical user interface characteristics similar to IT products, IT managers also have to evaluate it from the point of view of perceived ease of use by the employees who would be using the same. Two constructs - PU and PEOU - play a very important role in shaping the user's attitude and intention to adopt new technology.

### **Diffusion of Innovation**

Diffusion of Innovation theory (DOI) introduced by (Rogers, 1995) talks about five attributes which facilitate adoption of any innovative technological solution. They are relative advantage, compatibility, triability, observability, and complexity. For our study,

we investigated the relative advantage of cloud-based services vis-à-vis traditional IT services.

### **Technology Organization Environment (TOE) Framework**

According to the TOE framework (Tornatzky & Fleischer, 1990) three aspects of an organization that influence the decision to adopt new technological innovation are Technological context, Organizational context and Environmental context. Technological context describes both the internal and external technologies relevant to the firm. Organizational context refers to descriptive measures about the organization such as scope, size and managerial structure while Environmental context is the arena in which a firm conducts its business-its industry, competitors, and dealings with the government (Oliveira, Martins, & Lisboa, 2011). Technological context is relevant in our study as internal technological capabilities of an organization will be the basis of the decision of whether to adopt cloud-based services or not.

### **Technology–Task Fit Theory**

Technology–Task Fit (TTF) is the degree to which a technology assists an individual in performing his or her range of tasks. More specifically, TTF is the correspondence between task requirements, individual abilities, and the functionality of the technology (Goodhue & Thompson, 1995). More specifically, the TTF model suggests that technology adoption depends in part on how well the new technology fits with the requirement of a particular task (Klopping & McKinney, 2004). According to Goodhue & Thompson (1995), quality, authorization, compatibility, ease of use, training, production timeliness, systems reliability, and relationship with users are important characteristics of the TTF theory.

In case of cloud-based services, timeliness, system reliability, and relationship with users are important factors in the adoption decision.

### Proposed Conceptual Model and Propositions

In this study, we have developed a conceptual model from the organization's point of view which needs to make a decision regarding adoption of cloud-based

services for achieving agility. The proposed theoretical model for our study is shown in Figure 1. The proposed theoretical model has two parts. The first part discusses the drivers of cloud-based service adoption which can help the organization in making decisions. On the other hand, the second part talks about different types of agilities an organization can achieve through cloud-based service adoption.

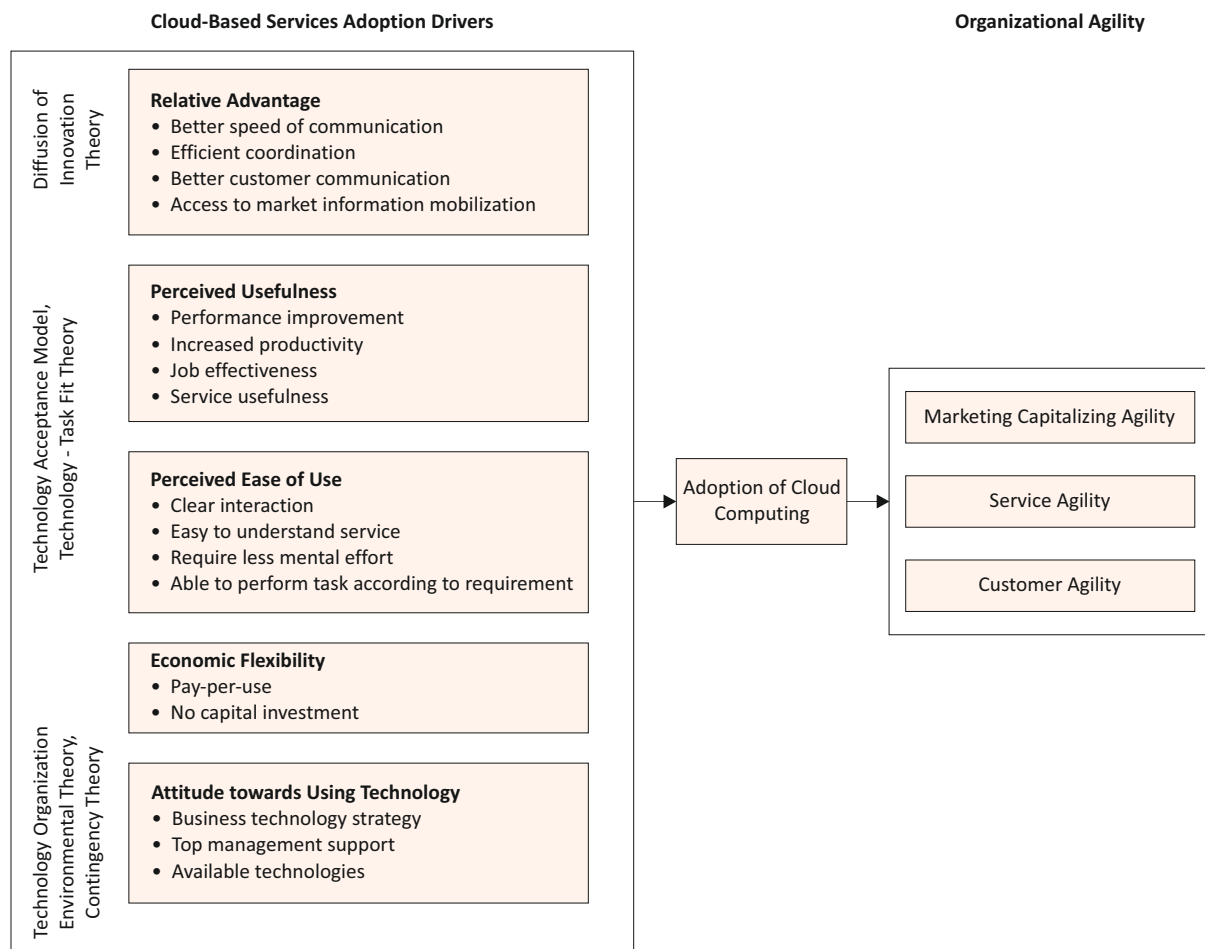


Figure 1: Proposed Conceptual Model

### Cloud-Based Service Adoption Drivers

In the current economic climate where the expectations of efficiencies and cost savings are growing from IT organizations, adoption of cloud-based services provides a good opportunity to get

started with cloud computing and reap the associated benefits of agility, cost savings and on-demand services while meeting the stringent enterprise security, performance and reliability requirements. The decision to adopt cloud-based services depends

on a number of factors and will be different for different organizations. Based on literature review and theoretical background, we have identified six constructs namely Relative Advantage (RA), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Economic Flexibility (EF), and Attitude towards Using Technology (ATUT) as factors influencing the adoption of cloud-based services.

**Relative Advantage (RA).** Relative advantage is the degree to which a technological factor is perceived as providing greater benefit for organizations. Cloud-based services, which allow operations to be generalized and mobilized through internet transactions, can substitute for or complement any IT application in an organization.(Rogers, 1995).Thus, Cloud-based services provide relative advantage in terms of availability of services throughout the world at a click resulting in faster alignment of solutions with the organization's requirement. Further, they can be deployed for use in the organization very fast thus further enabling the organization to deliver business services with speed and surprise. Cloud-based services include speed of business communication, efficient coordination among firms, better customer communications, and access to market information mobilization (Low et al., 2011). Thus, the portfolio of cloud-based services provides adoption agility as well as a huge portfolio of services. This is perceived as providing relative advantage over traditional IT services. Thus:

***Proposition 1: Relative advantage will positively affect the likelihood of adopting cloud-based service by an organization.***

**Perceived Usefulness (PU).** Perceived usefulness is the degree to which a person believes that using a

particular system would enhance his or her job performance(Davis, 1989). Perceived usefulness of a web-based service can be judged based on improvement in performance, productivity, job effectiveness and service usefulness. Cloud-based services improve the performance, productivity of IT managers who decide to adopt them because you can deploy these services with speed and surprise which in the earlier context were taking anywhere between three to nine months. As cloud-based services are web-based, organizations can have 24/7 access to various business processes anytime, anywhere through laptop, mobile, etc. Thus, the decision makers who perceive that cloud-based services will help them in achieving all these benefits are more likely to adopt cloud-based services. Thus:

***Proposition 2: Perceived Usefulness will positively affect the likelihood of cloud-based service adoption by an organization.***

**Perceived Ease of Use (PEOU).** Perceived Ease of Use refers to the degree to which a person believes that using a particular system would be free of effort (Davis, 1985). Extensive research in the past provides evidence of the significant effect of perceived ease of use on usage intention, either directly or indirectly (Hernandez & Mazzon, 2007; Guriting & Ndubisi , 2006; Eriksson, Kerem, & Nilsson, 2005). According to Venkatesh & Davis (2000), constructs related to control, intrinsic motivation, and emotions are anchors for the formation of perceived ease of use regarding a new system. These behaviours are desired from IT managers who take a decision to adopt cloud based services. In terms of cloud-based services, perceived ease of use will mean whether the IT managers find clear interaction and easy to understand service, less mental effort in using the



service and ability to perform tasks according to an organization's requirement. Further, since these services can be provided on a trial basis, it does not limit the IT manager and users to perceive the use but they can experience the use of these services and provide the feedback. Hence, this construct can be further modified as ease of use rather than perceived ease of use. Further, since these services will be delivered through cloud, they would be designed with more product-like features and easy access as compared to customized IT services. Also, it is in the interest of cloud service providers to make the interface easy, provide 24/7 helpdesk, etc. as against in-house services by the IT department. Thus:

***Proposition 3: Perceived Ease of Use will positively affect the likelihood of cloud-based service adoption by an organization.***

**Economic Flexibility (EF).** The biggest advantage of cloud-based services is that capital expenditure on hardware, software, and services can be avoided. Customers of cloud service providers typically pay a subscriber's fee, essentially "renting" their desired services and using them only when they are needed. Factors that impact the scale of any potential cost savings include the efficiency of a company's on-premise data centre as compared to the cloud vendor's, the company's existing operating cost, the level of adoption of cloud based services, and the type of functionality being hosted in the cloud. Thus, economic flexibility in cloud-based services can be analyzed in way of payment methods, duration and functionality of service hosted (Assunção & Costanzo, 2009; Kondo et al., 2009). Flexibility to choose payment and service according to an organization's requirement for a specific time period attracts organizations to select cloud-based services. Thus:

***Proposition 4: Economic Flexibility will positively affect the likelihood of cloud-based service adoption by an organization.***

**Attitude towards using Technology (ATUT).** The decision to adopt new technology is significantly influenced by organizational, technical and environmental factors. An organization's attitude towards adoption of new technology plays an important role in this decision. Business technology strategies, top management support, and pool of available technologies in the organization are some of the factors which can help in identifying an organization's attitude towards using new technology. If the top management is willing to invest and encourages innovation in technology, then adoption of new technology becomes easy. Cloud-based services allow exploring innovative technology without investing much upfront. This flexibility helps to change the attitude of managers towards cloud-based services because the risk of adoption of technology is not very high. Thus:

***Proposition 5: Positive attitude towards using technology will positively affect the likelihood of cloud-based service adoption by an organization.***

### **Organizational Agility**

The second part of our theoretical model talks about different forms of agility an organization can achieve for different functions. In this study, we have identified three types of agility, namely: market capitalizing agility, operational agility and customer agility.

**Market capitalizing agility.** Market capitalizing agility is the ability to quickly improve products or services according to the change of customers' preferences. It is an externally-focused agility, achieved by continuously

monitoring the market status and trends and communicating with customers (Sambamurthy et al., 2003). Raw data captured from the market can be converted into meaningful information which can help senior executives to make decisions about the improvement of products or services. Market capitalizing agility can precisely and rapidly sense the change of market and transfer this signal to a firm.

Market capitalizing agility represents a firm's ability to quickly respond to and capitalize on changes through continuously monitoring and quickly improving product/service to address customers' needs. Cloud-based service implementation not only lowers the barrier to innovation but also helps an organization to introduce new business models and new ways to deliver web-based services to customers which are easily accessible from anywhere in the world (Marston, Li, Bandyopadhyay, & Ghalsasi, 2011). Implementation of cloud-based services takes no time as they are web based services and anyone can start using these services as soon as they make the decision to adopt them. This helps organizations to avoid time in planning and implementing IT infrastructure in an organization and reduces time to market their product or service. This agility emphasizes a dynamic, aggressively change-embracing, and growth-oriented entrepreneurial mind set about strategic direction, decision making, and judgment in uncertain conditions (Sambamurthy et al., 2003; Volberda, 1996). Thus:

***Proposition 6: Adoption of cloud-based services will positively impact the market capitalization agility in an organization.***

**Operational agility.** Operational agility refers to a firm's ability in its internal business processes to

physically and rapidly cope with market or demand changes (Dove, 2001; Sambamurthy et al., 2003). For example, operational agility can integrate internal resources quickly to undertake the modification of a product or service scheme, and thereby improving productivity. This agility highlights flexible and rapidly responding operations as a critical foundation for enabling fast and fluid translation of innovative initiatives in the face of changes (Lu & Ramamurthy, 2011). This ability would help executives to make the right decision to produce or service the right things which can be sold out smoothly.

Operational agility in the service sector is defined as the capabilities that are associated with exemplar services. Organizations use these competitive capabilities to excel in service quality, delivery, flexibility and provide their services at a competitive cost. For example, in the 1990's, McDonald's needed more operational agility in operations to compete. The operational agility adopted by McDonald's in its services along with flexible production processes, helped it in gaining sustainable competitive advantage. It not only improved its customer service but also invested in training and building technical skills. The investment in Information Technology in the service-based processes has helped it leverage its quality in terms of customer service.

Due to a rapidly changing business environment and the pressure to become more cost-effective in the face of huge competition, many organizations do not have the requisite time or resources for improvement of internal processes. Cloud-based services help strengthen the internal processes and enhance the quality of business processes. Cloud-based services reduce the task of implementing hardware, applications configuration changes which results in

improving the efficiency of processes. It also helps in enforcing and maintaining internal security and auditing polices as well as compliance documentation.

Based on the above discussions, we can say that the decision to adopt cloud-based services will have a huge impact on operational agility resulting in internal process improvement and which in turn, will lead to better financial performance, which means improved organization performance. Thus:

***Proposition 7: Adoption of cloud-based services will positively impact the operational agility in an organization.***

**Customer Agility.** Customer agility is defined as the degree to which a firm is able to sense and respond quickly to customer-based opportunities for innovation and competitive action. Today, customers act as co-creators and contribute to product design and development instead of being merely receivers of the products and services. To be agile at this step, an enterprise should have the ability to co-opt with customers in exploring and exploiting the opportunities for innovation and competitive action. This is called customer agility (Roberts & Grover, 2012; Sambamurthy et al., 2003).

Understanding customer perspective is very important for achieving customer agility. Cloud-based services can help in creating the environment for customers to interact with the organization and be part of innovative implementations. Performance of an IT application or service can be judged on parameters like availability, trustworthiness, reliability and speed. Cloud-based services are available to customers anytime, anywhere and can be accessed using any device (PC, laptop, mobile, smartphones, etc.). The

best customer experience lies in a combination of customer service, support and functionalities. Cloud-based services offer balanced offerings to customers to achieve this experience. There should be a strong match between customer sensing and responding capabilities for greater customer agility. Cloud-based IT infrastructure reach and richness enhance customer agility by providing 24/7 access to the customer through portals and use of virtual communities (Sambamurthy et al., 2003). For example, the marketing and sales department aims to attain the exact customer demands through the forecasting process. In such a case, using a cloud-based sales force management solution can ease the issue because the information can directly be exchanged between the sales department at the headquarters and the local market anytime and through any media. Thus:

***Proposition 8: Adoption of cloud-based services will positively impact the customer agility in an organization.***

#### **Discussion**

This research model presents the adoption of cloud-based services and ability to achieve organizational agility. Any kind of agility is defined as the ability to sense and respond with speed and surprise.. Those organizations which developed robust processes and knowledge reach and richness marched ahead of the others. It required long-term strategic IT planning and considerable investment by organizations. However, there has been a paradigm shift today due to availability of these services on cloud. Thus, long-term planning and higher investment no longer provides competitive advantage. On the contrary, smaller investment in innovative services helps organizations to open new challenges for others in the market. Thus, we as researchers, feel that cloud computing will

definitely help organizations achieve customer agility, operations agility and market capitalizing agility. Thus, it would force IT managers to explore cloud-based services while vendors would enhance the scope of services in the cloud platform. Further, we propose that this adoption would be much higher in the SME sector providing these players greater agility in managing IT infrastructure.

These findings have significant implications and great value to managers and cloud-based service providers in terms of understating the role of cloud-based services adoption in achieving organizational agility. Cloud-based service providers can use this model to understand why some organizations choose to adopt cloud-based IT services and others don't. They can use this information to improve their interaction with customers and acquire new ones. On the other hand, managers or decision makers can use this model to access cloud-based services and enhance their role in achieving organizational agility.

## Future Research Directions

Cloud-based technologies have already affected the business environment. By offering a conceptual model of adoption of cloud-based solutions and their impact on organizational agility, we have offered some basic guidelines to managers for decision making regarding implementation of cloud services in an organization. Our research also opens up several avenues for future research. There is an opportunity to further investigate the impact of each driver of adoption of cloud-based services on different types of agility associated with various organizational processes such as manufacturing agility, supply chain agility, etc. The theoretical model can be tested through empirical research and new constructors can be added. Further, a comparative study can be conducted between those organizations using traditional IT services vis-à-vis organizations using cloud-based services for achieving agility. Future studies can also examine adoption of cloud-based services by different sectors in both qualitative as well as quantitative way.

## Conclusion

While the approach to achieve agility remains elusive to many firms, findings from our study emphasize the essential role played by cloud-based services in achieving agility, which has not been examined by previous research. We hope that this study will provide some practical implications to attain agility, which is especially significant for firms competing in today's turbulent business environment. Both businesses and IT managers benefit from the model developed in this study in understanding not only the drivers of adoption of emerging cloud-based technologies but also the impact of these emerging technologies on achieving market capitalization agility, service agility and customer agility.

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# Decision Making Process for Bottom-of-the-Pyramid Consumers: A Case of FMCG products

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## **Abstract**

The purpose of this paper is to examine the nature of family purchase decision making at the Bottom of the Pyramid (BOP) using a study of BOP consumers in India. The primary objective is to identify the purchase approach of BOP consumers for Fast Moving Consumer Good (FMCG) products depending on the role of each family member and the types of roles assumed by different family members, given the constraints they face in the dynamic environment that characterizes the BOP. The paper qualitatively investigates the family decision making of FMCG products based on the model proposed by Engel et al.,

1973 and also includes the children's influence and participation at specific stages of the decision making process. Moreover the unique point of differentiation of the research is the comparative study between the people living in rural and urban areas of Jammu, J&K (India). Although the results highlight the dominance of the husband in the purchase of products in BOP markets in India, the role of the wife and children are also very well emphasized in the findings.

**Key words:** Bottom of the Pyramid, Decision-making, Family Purchase.

## Introduction

International business research has increasingly focused on emerging and underdeveloped markets as areas from which new insights can be drawn (Ni and Wan, 2008). At the bottom of the pyramid (BOP) are the roughly four billion people who live at bare-bones, subsistence level. Indeed, three billion of them live on \$1-\$3 a day, and another 1.3bn live in extreme poverty, on less than \$1.25 a day (Ruvinsky, 2011). BOP markets tend to be concentrated in Asia, Africa and Latin America, with an estimated 60 percent in India and China. Although the tendency has been to treat these markets as one that displays similar consumer behavioural trends and processes, this approach does not acknowledge differing characteristics in such markets. The research conducted for development using the framework of BOP, has argued that poor people are well aware of the products and services they use. If firms are innovative to tailor goods and services that meet the economic realities and needs of the BOPs, a mutual benefit exists for the private sector and the BOPs, which in turn, results in a more stable urban economy (Aspen Institute, 2007). Here, the rural Indian BOP market is defined as households in the bottom four expenditure quintiles (based on data from the National Sample Survey Organization, India) that spend less than INR 3,453 (US\$75) on goods and services per month. This definition represents a market of 114 million households, or 76 percent of the total rural population. However, there have been other attempts to classify this market in view of changing world demographic and economic circumstances. Consensus has been to use the World Bank classification which, when rounded up, classifies BOP consumers as those who live on less than US\$1 a day (Banerjee and Duflo, 2006; Mahajan and Banga, 2006; Prahalad, 2005).

Evolution of the literature on the BOP raises the need for researchers to investigate consumer behaviour in these markets, without necessarily treating BOP consumers as homogeneous, but acknowledging common constraints that can be found in these environments (Hart, 2002; Prahalad, 2002; Prahalad and Hart, 2002). The call for increased business attention towards the BOP was primarily advocated by Prahalad (2005) although Hart (2002) is credited with initiating discussion of the concept. Prahalad also claims that the BOP potential market is \$13 trillion at PPP. This grossly over-estimates the BOP market size. The average consumption of poor people is \$1.25 per day. Assuming there are 2.7 billion poor people, this implies a BOP market size of \$1.2 trillion, at PPP in 2002 (Karnani, 2007).

Today, while it is increasingly accepted that the BOP marketing offers opportunities to create value for both the poor and for companies that engage this market, the early promises of a “fortune” seem to have been overstated (Karnani, 2007b). Two reasons for this are apparent including disagreement as to the real income of BOP consumers and the sheer size of the BOP market itself. These markets are characterized by informal economic sectors that are unprotected by established institutional rules (Feige, 1990; de Soto, 2000) and therefore represent significant challenges to service providers (London and Hart, 2004; London et al., 2010). The success stories of MNCs serving poor customers cited in the BOP literature are predominantly in fast-growing economies such as India, where the GDP per capita remains low, as well as in countries like Brazil and Mexico with higher per-capita income. Not surprisingly, BOP advocates fail to provide cases of MNCs serving the BOP population in LDCs. These market-based approaches to poverty reduction differ from traditional approaches in that,

rather than thinking in terms of aid, charity and public assistance, the focus is on using business models and tools to solve BOP problems (Sachs, 2005).

The purpose of this paper is to examine the nature of family purchase decision making for FMCG products at the BOP using a study of BOP consumers in India. The primary objective is to identify the purchase approach of FMCG products. For this, we used the role of the family members in decision making and the types of roles assumed by different family members, given the constraints they face in the dynamic environment that characterizes the BOP. This focus on the family is because of the claim that it constitutes one of the most important influences on consumer decision making (Brown, 1979; Hawkins et al., 2004). However, this study seeks to establish how differences in family make up and the role the family members play in individual lives, shape their decision making in day-to-day buying. The primary motivation is to expand knowledge about how BOP consumers behave in rural Indian markets. This is an area that existing literature, in Indian markets, does not extensively cover. Further motivation is driven by Thomson et al.'s (2007) argument that qualitative investigation will enable researchers to learn more about the processes and complexities of family purchasing given the opportunity it provides researchers to study consumers in their environment.

### **Family purchase decision making: A review**

Ekstrom (1995) defines the concept of influence in family decision-making as "a change in a person's dispositions, as a result of interaction between parents and children." In her definition of influence, Grønhoj (2002) talks about competence enabling the achievement of specific results. What is interesting in

these definitions is that influence means making a person change his or her decisions via interaction or direct confrontation. Interaction is part of the active or direct influence, where for instance, the child interacts with his/her parents by using various influence techniques to achieve what he or she wants. Influence can also be more passive or indirect, where parents are aware of the child's preferences and try to comply without direct interaction with the child (Belch et al., 1985; Grønhoj, 2002; Jensen, 1990). The family constitutes one of the most important influences on consumer decision making (Cotte and Wood, 2004; O'Malley and Prothero, 2007; Hamilton, 2009). Sheth (1974) developed a model outlining family purchase decision making, viewing it as a form of decision making involving several players assuming different roles. Decision making for the purchases of goods and services is more of a joint activity, making the role of family in purchase decision making important (Lackman and Lanasa, 1993; Burns, 1992; Su et al., 2003). In general, consumption of goods and services can be made in three types: first is the consumption by individual members by themselves; second is the consumption by the whole family jointly, and third is consumption by the household unit (Seth, 1974). Jensen (1990) has developed a family decision-making model that includes several decision stages and more than one adult in the family. This family model has its theoretical background particularly in two previous models: Based on Gredal's (1966) model, several decision stages are added with a particular focus on the importance of decision stages lying ahead of the choice of a specific alternative, and based on Wind's (1976) model, a role aspect from the buying centre perspective is added. In our research, Jensen's (1990) model is used as a starting point for the understanding of family decision-making.

The makeup of the family and the role it plays in individuals' lives is different across markets, particularly in the context of BOP markets. Indian families are likely to assume the concept of joint families where the head of the family is the grandfather and his decision matters a lot (Purvez, 2003). This does not imply that the nuclear family is not evident in urban markets; however, it is not much prevalent in the BOP markets. This paper focuses on the family structure of the BOP customers and the decision making patterns. The importance of family is illustrated by Xia et al. (2006) who review literature on family purchase decision making for the last six decades. Although families use products, individuals usually buy these products and make the purchase decision. Different members of the family have different roles in influencing the purchase decision. These roles are not static but can change over time, thereby affecting the process (Su et al., 2003; Belch and Willis, 2001). The five key traditional individual roles that have been identified are: initiator or gatekeeper; influencer; decider; buyer; and user (Engel et al., 1973). This is an area which requires further research at the BOP, where economic and social constraints have the potential to require family members to have multiple roles when it comes to buying products such as food and personal hygiene items (Purvez, 2003).

Gender influence is also an important factor, although declining gender differences and waning gender identification have resulted in the dilution of focus on gender in the purchase decision process (Qualls, 1982, 1987; Commuri and Gentry, 2005; Mano-Negrin and Katz, 2003). Earlier, consumer behaviour studies have categorized family decision making as husband dominant, wife dominant, joint or individualized. Husband dominant decisions have traditionally been

concerned with the purchase of high involvement products whereas wife dominant decisions were involved in household purchasing, food and kitchen appliance purchasing. But these patterns are less pronounced today. Occupational roles of women have changed; similarly the ranges of family decisions have also changed (Hawkins, 2004). This structure has been influenced by the changing roles of spouses which has seen more women entering the workforce whilst husbands assume greater household roles (Wut and Chou, 2009; Xia et al., 2006). However, spouses have different roles in buying decisions. Joint decision making has long been established as a common construct in family purchase decision making in western markets (Shepherd and Woodruff, 1988; Foster and Olshavsky, 1988). Williams and Burns (2000) advocated expanding the scope of the investigation to include the role of children across different markets. Husbands and wives are assumed to play similar roles at the BOP, especially for products such as food and personal hygiene products (Purvez, 2003; Viswanathan et al., 2008). However, this assumption does not take into consideration the potential impact of economic and social constraints on these roles in a changing environment at the BOP.

The focus of previous studies was centred on the role of husbands and wives, who have been considered the relevant decision-making unit in the family; whereas the children's role in the family was ignored, overlooked, and neglected (Jenkins 1979; Lee 1994). It is believed that the norm, tradition and rules of parents deciding in the family have begun to disappear. Moreover, now the communication in the family has become more open and democratic. Consequently, children achieve more influence on family decision making (Mikkelsen 2006). The influence of adult children has received virtually no

attention, although Law and Warnes (1982) found that in some instances, older people moving home would be influenced by the advice, encouragement, or wishes of children or siblings; Allen et al. (1992) asserted that the role of children in persuading their parents to move is known to be significant. The role of children as part of the family includes an influence on consumer decision making that is assumed to have grown in importance (Kaur and Singh, 2006; Caruana and Vassallo, 2003). But, the scenario might be significantly different at the BOP where issues such as the importance of food might be very different and the subsequent role of children might be affected. Family characteristics also play an important role in terms of influencing the nature of purchasing decisions. The role of children in influencing purchase decisions at the BOP is sparsely researched although Kaur and Singh (2006) attempt to draw comparisons on children's role in family purchase decision making in India and the west. However, their study does not specifically look at this role in the Indian BOP market. So, this study has catered to the role of children in family purchase decision making.

### **Research context and methodology:**

The BOP market in India not only faces resource shortages in terms of finance but also deals with lack of information, education and basic infrastructure such as transportation and sanitation (Maranz, 2001). Our research in India was conducted in urban and rural poor communities in the Jammu and Reasi district of Jammu and Kashmir. Our research was typically focused on understanding the purchase behaviour and the decision making criteria of the groups living in these places. Mixed research methods were used to collect data between the period 2010-2012 drawing insights from the specific BOP context of India. Qualitative consumer interviews (Axinn and Pearce,

2006; Creswell, 2007) were supplemented by ethnographic observations. A total of 80 semi-structured personal interviews were conducted with BOP consumers to establish how they made purchases. These interviews were conducted while living with informants in their local environments (Wolcott, 1999), enabling the researcher to observe how consumers conducted their purchases and to identify the role of different family members in the process. Interviews were augmented by observations made whilst staying with respondents and accompanying them on shopping trips in their locality. Twenty two such meetings were attended. These meetings exposed the researcher to the collective nature of sharing information among BOP consumers and on different aspects of their lives, including how they made product purchases.

Based on prior discussions with BOP consumers, we observed that a number of BOP consumers had self-owned very small businesses like street vending or were employed in activities such as agriculture or house construction where they were paid on a daily or hourly basis (Bannerjee and Dufflo, 2007). So, looking upon this, we divided our sample into two BOP segments. From the Reasi district, we selected contract labourers of the Shri Mata Vaishno Devi University (SMVDU). For the second sample, we took small business owners from the Jammu region. 40 interviewees were selected from the Jammu region and 40 from the Reasi district. This sampling was based on convenience selection of respondents who could specifically provide an understanding of the research problem and central phenomenon in the study. An analysis of the meaning of the responses was achieved through condensation, categorization, narration, and interpretation approaches. Condensation involved reduction of the responses into succinct summaries,

while categorization involved the reduction of the data into categories, figures and tables. Narrative structuring involved creation of a coherent structure and plots of the data. Interpretation of the responses involved re-contextualization of the statements within a broader framework of reference, and included the previous literature.

## **Findings:**

### **The Economic Realm of BOP consumers:**

The BOP market is characterized by lack of access to stores and to economic opportunities. In a rural setting, poor infrastructure and the lack of access present a sharp contrast to the urban setting in terms of what is viable as a customer or an entrepreneur. Often, purchase at a large store requires a lot of travel. This results in the rural family preferring local retailers that are located near their residences. The main constraints shaping respondents' behaviour included unemployment, lack of income and the impact of hyper-inflation. Weak economic conditions were cited as being responsible for shortages of products. Lack of facilities available in the locality was the main reason for their shopping attributes differing from urban families. Another very vital aspect that impacted their purchase decisions was their low level of literacy; it

resulted in them preferring to consider a single concrete attribute such as price over abstract attributes (Viswanathan et al, 2008). These customers also engage in more pictorial thinking; for instance, they view brands as objects in the advertisements and visualize the amount they have to buy. Due to lack of literacy, many BOP customers lack confidence or skills needed to make good decisions and are also unaware of their rights as consumers. Such factors discourage them from planning purchases, checking prices, switching shops to obtain a better deal or evaluating product quality by reading the product details before purchase. These customers seek information from the neighbours who have already used the product or will rely on the retailer's suggestions about the product. Another important aspect of their shopping behaviour was the place of purchase. These consumers purchased the day-to-day products from retail shops that were close to their residences due to credit facilities they received from these shops. Moreover, due to a high social relationship attribute, such consumers showed strong loyalty towards a single retailer. A high proportion of their income is spent on necessities such as food and groceries, clothing and unexpected expenses (usually serious illness).

Table 1: Customer Profiling

<b>Gender</b>	Jammu (Urban)	Reasi (Rural)
Male	22	27
Female	18	13
<b>Marital Status</b>		
Married	24	27
Unmarried	16	13
<b>Age</b>		
18-25	13	7
26-33	15	13
34-40	8	9
>40	4	11
<b>Monthly Earnings</b>		
1000-2000	10	5
2000-3000	12	11
3000-4000	18	24
<b>Place of living</b>		
Natives	14	33
Migrated	26	7
<b>Family Structure</b>		
Nuclear	29	15
Joint	11	35
<b>Frequency of purchase</b>		
Daily	13	17
Weekly	16	14
Monthly	11	9

## **Jammu Region (Urban):**

### **Family structure:**

Consumers forming the BOP of Jammu region lived in a nuclear family structure. This was because a majority of the people had migrated from their place of origin. In spite of this situation, although the family structure was a nuclear one, it included extended family members. The respondents stated that they had other family members living in other areas of Jammu; in other words, they considered their relatives who lived in other parts of Jammu as a part of their family. According to Ferber (1973), the main job of the husband in the family was to earn money while the wife was responsible for looking after the household, but this scenario was totally contradicted. Similar results have been analysed by many researchers like Jenkins (1979), Luke and Munshi (2005); according to them, husbands and wives work as a group in the family decision-making. It was observed that earlier, females stayed home and were not engaged in earning money. However, this had changed and now, they too were employed and provided financial support to their husbands. This was observed to be a major reason for females now becoming main buyers for some products (Refer to Statement 1). Here, both the husband and wife were earning. The respondents stated that they had migrated due to unemployment in their place of origin and believed that they should grab job opportunities here (Refer to Statement 2).

### **Consumer roles and family decision making for FMCG goods:**

The focus of our study is on the family decision making patterns for FMCG products. Differences between family decision models are explained using the decision role framework of initiator or gatekeeper; influencer; decider; buyer; and user (Engel et al., 1973). We have compared the urban and rural BOP

consumer's decision making styles for FMCG products. Traditionally it has been observed that the husband is the main influencer and even the decision maker of family decisions for day-to-day goods. The findings from this study point to a change from this traditional gender-specific approach in decision making. This was particularly the case among interviewees from the Jammu district in which husbands and wives now shared responsibility for buying FMCG products for their daily use. Whoever found the products needed or at a cheaper price, whether husband or wife, made the purchase on almost a daily basis (Refer to Statement 3). Purchases were mostly made from the nearby retailer who was known to the family and offered them credit facilities (Refer to Statement 4). In earlier studies, it was observed that although the house wife may or may not be the buyer, she is the main influencer of the family purchase decisions. But the knowledge and willingness of males to participate in this process reiterated the importance of joint ownership of the process of buying, as it could enhance the chances of purchasing products at an affordable price. We accompanied both husband and wife on shopping expeditions and thus had the opportunity to observe both husbands and wives searching for and buying FMCG products. Both indicated the importance of the price and the quantity of the goods to be purchased. Also in case a product was difficult to obtain, both showed agreement in purchasing the goods (Refer to Statement 5).

The role of children was very evidently demonstrated by the respondents. All the participants' children went to school; some had completed elementary education. Children have most influence with respect to product type, colour and brand (Belch et al., 1985) of the goods they purchased for their house. Also, influence seems



to vary across product categories in FMCG products. Findings showed that children had most influence with respect to products for their own consumption. It was observed that children in Jammu (urban) were more exposed to product and brand knowledge as compared to Reasi (rural). This was because of the exposure towards media and other reference groups in schools. Children play a very effective role as initiators and sometimes even decision makers in family decisions (Refer to Statement 6).

### **Reasi (Rural):**

#### **Family Structure:**

Findings from our study indicated that most families lived in the traditional structure comprising of husband as head of the family, wife and children. However, most families in the Reasi district lived in a joint family structure. The family structure is typically traditional where the husband is empowered to protect the family and earn money while the wife tends to deal with the household chores (Refer to Statement 7). The domicile of the family members differed because many of them had their children studying in other districts. Adult children migrated to Jammu in search of jobs (Refer to Statement 8).

#### **Consumer roles and family decision making for FMCG products:**

The findings from the Reasi district (rural) showed that families still adhered to the traditional approach where the husband was the initiator and the main decision maker of the family's decisions (Refer to Statement 9). However, we were unable to reach a consensus since we were informed that usually men were the dominant decision makers only for products purchased from the city while women dominated with respect to products purchased locally (Refer to Statement 10). The situation here differed to that in

Jammu (urban). It was clearly observed that in specific decisions, the wife was the main initiator but the final purchasing agent was always the husband. Perhaps the single most important observation was that while the husband played the practical role in decision making, the wife played the emotional role. The husband ultimately decided what to buy but took the wife's views into consideration. All the family members used the products even though the husband was the one who bought the products. Products were said to be less readily available and affordable in the Reasi district, which provided more motivation for the husbands to take a leading role in buying the products. For most of the high involvement products, the husbands had to travel to Jammu to buy them. However, the interviewees explained that in some cases, the housewives in these areas often bought products from the local shops or informal markets when available (Refer to Statement 11).

Children played an important role in the purchase decisions of some products. In most cases, they were the initiators. This study has brought out the dimension of the role of children in the purchase decisions of the family. Some house wives claimed that their children were educated and therefore, more aware of what products were good. Children tended to assume multiple roles in the process - they decided, influenced and did the actual buying of the products. The parents often jointly initiated the process with the children but at the final buying stage, the husband was the final decider. The respondents explained that this was the pattern followed because their children were educated and hence, could suggest which products should be purchased but the final purchaser was the husband (Refer to Statement 12).

**Discussion and conclusion:**

Environmental constraints that can influence family purchase decision making may vary between markets, particularly between urban and rural markets where most BOP families are to be found. Such potential differences suggest the need to consider family purchase decision making within its political, legal, economic and social context. Keeping these aspects in mind, we studied the BOP consumer's decision making styles for FMCG products in urban and rural areas. In India, consumers at the BOP display differing family purchase decision making processes, in this case, primarily between urban BOP and rural BOP. The rural regions in India do not have proper facilities in terms of transportation, sanitation or even media exposure. Due to these reasons, people are unaware of new market trends and thus rely on one decision maker i.e. the head of the family who has some exposure as a result of travelling to the city. As employment opportunities in the rural areas are insufficient, these people tend to migrate to urban areas in search of jobs.

Findings from this study are only partly in accordance with those by Purvez (2003) and Viswanathan (2007), who highlight the dominance of the husband in the purchase of products in BOP markets in India. However, the earlier findings were restricted to the rural BOP consumers and do not provide insights into the behaviour of urban BOP consumers. But our study shows an increase in dual and shared responsibility between husbands and wives that traditionally was not the case in rural BOP families but has emerged with the changing environment. This shared responsibility is consistent with observations from previous literature although the patterns and forms evident at the BOP are different from those experienced in western markets.

Roles of the spouses among Indian BOP consumers in rural areas have been changing. While husbands were found to be increasingly involved in the purchase decision and in some instances, assumed major responsibility, the wives have started playing an important role in purchase decisions. These have been illustrated by the different models that emerge from this study illustrated in Figures 1 and 2. For example, the pressure of limited income, uncertain product availability and price hyperinflation resulted in spouses making joint purchase decisions and at times, speculative purchases. This has even led to people from rural areas migrating to urban areas in search of jobs. Shared responsibility was intended to militate against the high uncertainty of product availability and to provide some form of security to families' product supply. The role of children was also found to have become increasingly important indicating a shift from the traditional buying approach. Findings from this study suggest that in BOP families in India, older children assumed significant responsibility for the support of both their parents and siblings, which resulted in them assuming multiple roles in the purchase decision making process. This was particularly the case in both the urban and rural groups.

**Implications:**

In terms of marketing strategies, marketers need to understand that the BOP market in India is not homogenous. They also need to understand the dynamics of the family purchase decision process. Given the importance of travelling for even small necessities by the BOP consumers, suppliers need to consider distribution systems that are appropriate to the market environment.

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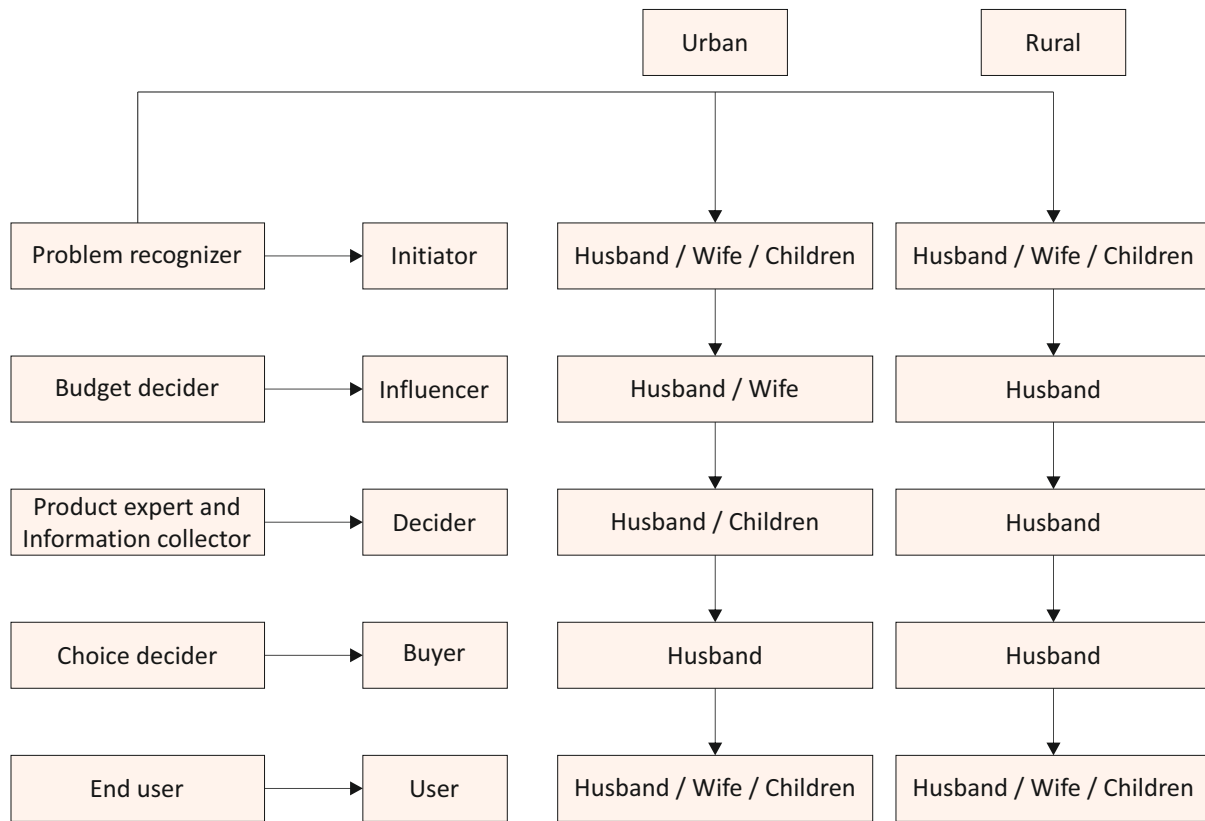
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**Conceptual framework:**

**Family Decision Making Model for urban and rural BOP consumers**



**Appendix**

Statement 1: (Mansi Devi, 27)

“Earlier, I was not working and was dependent on my husband even for small household things. But now I work and earn for myself. This has made me self dependent for atleast some products, which I get when I need them.”

Statement 2: (Kesho Rani, 31)

“We belong to the Kathua district, but migrated to Jammu in 2009 in search of a job. Now my husband runs his own shop of vegetables. But we have our relatives still living in Kathua and we send them some money every month.”

Statement 3: (Ram Singh, 42)

“My wife usually purchases all the household commodities and I allow her to do so because she knows more than me in this aspect. She knows which product is cheaper and is of better quality.”

Statement 4: (Mohan Lal Sharma (38) & Krishna Devi (26))

“We purchase our daily base commodities from the nearby retailer because we know him very well and since we have shifted to this place, we have always purchased from his store. He even gives us credit facility.”

Statement 5: (Shanti Devi, 28)

“Food and other grocery items which are not available readily are purchased by my husband from the city area. Because these are not available from the nearby retailer” ...” we purchase these commodities for the whole month at a single time.”

Statement 6: (Neelam Devi, 38)

“I have three children, one daughter and two sons. All study in schools. They have great knowledge about what new products are available in the market. Sometimes I don't even know the name of the brands they talk about”... “They go with their father for the purchases and buy goods accordingly”... “Sometimes it is on their insistence that we have to purchase a product.”

Statement 7: (Parkasho Devi, 24)

“My husband works in SMVDU as a helper. He gets money for the house and takes full responsibility of the family”... “I take care of the children and the rest of the family. My husband does not like me to do work and earn money.”

Statement 8: (ManoharLal, 46)

“I have one son and one daughter. My elder daughter is married and my son is working in Jammu. He lives there and earns his livelihood. But he regularly sends us money.”

Statement 9: (Rampal Sharma, 39)

“In my family, I purchase all the goods. For the household items, my wife tells me what is needed but I go to the market to make the purchases.”

Statement 10: (Seema Devi, 28)

“My household goods are purchased by me from the nearby retailer, but when the goods are not available here, my husband goes to the city market and purchases it, especially when we have to buy medicines.”

Statement 11: (Rajjo, 32)

“My husband purchases all the goods except the grocery items which are available at the nearby retailer. I tell my husband what has to be bought and he buys these from the city market”... “Sometimes my children also accompany him to the main market as they are very excited to go to the market and also have good product knowledge.”

Statement 12: (Kamlesh Kumar, 33)

“I usually go to the main market to make our purchases. My wife tells me what she needs for the house and I make the purchases. My children also accompany me to the market as they go to schools and have their own requirements for school.”

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# A Comparative Analysis of the Medical Tourism Industry in India and Thailand

**Dr. Aniruddh Bhaidkar**

## **Abstract**

Medical tourism is a relatively new industry which has risen in a big way over the last two decades. Globalisation in the highly lucrative healthcare sector has opened up new opportunities for the economies of India and Thailand. This thesis provides a descriptive and analytical overview of the Medical Tourism industry in India and Thailand. Approach: The author evaluates the sector in terms of Porter's Diamond model of National Competitiveness. The author has gathered data from available literature and from

primary sources on the financial parameters of major local competitors in medical tourism. Findings: The author concludes that major competitors in medical tourism benefit from strong government support and rely heavily on the international market to fuel their growth.

**Key words:** Medical Tourism, India, Thailand, Comparative Analysis, Porter's Diamond Analysis

## Introduction

Medical tourism or health tourism is a relatively new concept where patients travel to a foreign destination to obtain quality medical treatments that are better or comparable to the ones in their home country but are available at a significantly lower cost. There has been a phenomenal growth in this trend over the past decade. Due to its speedy growth, medical tourism has developed from a niche market to a global industry. A combination of high costs of treatment procedures and long waiting lists in the west along with growth of the internet, relative affordability of international air travel and favourable exchange rates in the east, has made medical tourism an attractive option for prospective patients (Connell 2005).

## Medical Tourism in Asia

Medical tourism as an industry has been fast emerging worldwide. It involves about 50 countries across six continents amongst which several Asian countries lead the charts. India, Thailand and Singapore comprise a major chunk of about 90% of the market share in Asia through systematic investments in their medical and infrastructure facilities (NaRanong et al 2009).

## Why India and Thailand?

The medical tourism industry has considerable appeal to emerging economies. (Deloitte 2008) predicts this industry to demonstrate a very strong growth in the near future. The rapidly rising costs of medical treatment in the west in addition to the increasing waiting lists for treatment have made medical tourism more appealing as patients increasingly look for global and cost effective solutions to meet their healthcare needs. Most widely cited estimates of the industry suggest that it has already grown from a \$40 billion industry in 2004 to a \$ 100 billion by 2010 (Nagar

2010). Deloitte 2008 suggests that by 2014, 4% of all the tourists from the US will be medical tourists. While medical tourists have sought medical care in many parts of the world, India and Thailand have a significant share in the size of the medical tourism industry, which itself is growing at a rate of 20% per year (Velasco 2008).

Both India and Thailand are leading players in the field of medical tourism. Since the mid-1990s, they have embarked on reforms resulting in a growing number of private health players. The governments are involved to varying extents in the development of the medical tourism industry by supporting it through various fiscal incentives and policy modifications to encourage growth. Their economic policies are formulated more on the basis of domestic politics than on the international economic demands (Sethaput 2006; Chanda 2011).

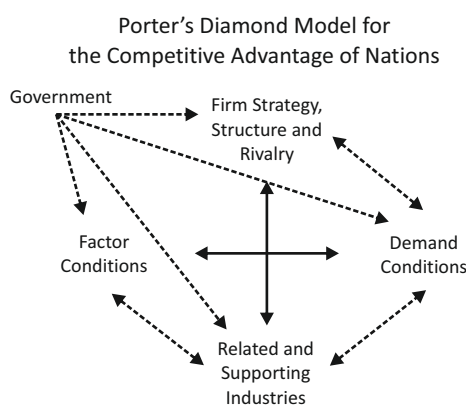
## Porter's National Diamond Model of Competitive Advantage of Nations

This paper mainly focuses on the competitive advantages of the medical tourism industry in India and Thailand, two fast developing players in the industry. The potential for impacting the local healthcare systems of these countries is discussed through examination of six factors of the "Porter's Diamond of National Competitiveness".

Through the "Diamond Model of Competitive advantage of Nations", Porter attempts to answer the question, 'Why are some countries more successful in particular industries than others?'

Porter's framework of analysis has four classes of national attributes to determine the competitive

advantage of a nation which he calls the National Diamond; these include factor conditions, demand conditions, related and supporting industries and firm strategies, and rivalry (Frana A.J 1992). He also identifies two additional supporting factors - government policy and change that support the system of national competitiveness (Smit 2010). The government interacts with the four determinants by fostering or deterring competitive advantage (Mann et al 2011).



Source: Porter, Michael (2000)  
Figure 1: Porter's Diamond Model

## Findings and Analysis

The medical tourism industry as a whole is directly influenced by a range of interconnected factors. The author applies one widely utilised frame work to assess the competitive advantage of nations - the Diamond Model of Competitive Advantage of Nations - to understand the competitive position of India and Thailand with respect to competition at a global level and between each other.

Sorting out observations into similar sets or groups can prove to be an important tool for examining relationships among strategy, environment, performance and leadership (Shook 1996). This model redefines “national competitiveness” as a set of

factors, policies and institutions that determine the countries' level of productivity. Shook suggests that high intensity domestic competition breeds international success. This model has received wide acceptance among researchers and is a popular framework to access national competitiveness (Sagheer et al 2007).

Porter's Diamond Model consists of six elements; four national determinants and two external variables - government and chance. Porter's four determinants and two outside forces interact with each other within the framework of the diamond of competitive advantage; the type and quality of these interactions determine the global competitiveness of the nation (Grant 1991). According to Porter, the four determinants for a nation “... shape the environment in which local firms compete and promote or impede the creation of competitive conditions.” (Cheng-Ru 2006)

The research structure is based on these six pillars of research for studying the comparative advantage between nations. They will serve as a tool to provide a deeper understanding of their role in the framework of the healthcare systems of India and Thailand.

### Factor Conditions:

These lie at the centre of the theory of international comparative advantage (Grant 2002). The general economic conditions of the countries, the industry structure and the business environments will be thoroughly reviewed. The geographic area, infrastructure, language barriers and quality of medical education, access to credit, the GDP of the respective countries, and bureaucracy are various factors that will be considered to determine the conditions. Porter establishes a relationship between

the basic and advanced factors. He postulates that the basic factors can provide initial advantage to a nation which are supported and advanced by the advanced factors. Conversely, a deficiency in basic factors can create pressure to invest in advanced factors (Grant 1991).

**India:**

**Climatic conditions:**

Medical tourism is usually located in warm and pleasant environments. India has a major advantage with these basic factors including the weather conditions, natural resources and its large size, which gives it an advantage, especially for visitors from countries with colder climates (Lee2007) (Chacko2002).

**Cost - Advantage India**

The way healthcare is structured in India is a primary factor to achieve cost savings. When compared to the USA and Europe, there is comparatively minimal third party involvement due to limited health insurance and negligible government participation in healthcare delivery. The costs of treatment in India are not only cheaper, but the waiting times are nil. The comparison made by the American Medical Association through a cost comparison study estimates that a heart valve replacement may cost £150,000 in the USA, £ 70,000 in Britain but the same procedure will cost £7,500 in India. This price is not only considerably lower than in the UK or USA but is also lower when compared to other regional players in Medical tourism; for instance, the same procedure would cost £ 10,000 in Thailand and £12,000 in Singapore. This gives India a certain competitive edge as compared to other countries.

Price transparency is much better in India as compared to USA because there is less likelihood of cross subsidisation by the government. The patients are

expected to bear the costs of their treatment.

**Comparative cost advantage of the Indian medical tourism industry:**

The prime factors for fuelling the growth of the medical tourism industry in India are two-pronged; on the one hand is the decreasing access, increasing costs of medical treatment, and declining quality of healthcare delivery in the west while on the other hand, there is easy access, improving quality and affordable costs of medical treatment in India. Medical tourism in India is a niche market which offers top end, non-emergency medical procedures at reasonably low costs. There are a wide range of procedures on offer including heart surgery, joint replacements, treatments, LASER eye surgeries and high quality dental care.

Let's consider the costs of a single routine surgical procedure - hip replacement – in India and in the USA. The price in India is around 75 to 85% less compared to the USA inspite of being conducted in an internationally accredited hospital in India. The typical costs for an inpatient stay in a US hospital for the procedure costs USD 46,875; the same procedure costs USD 8,750 in a JCI accredited Indian hospital (Piozolo 2011, AMA report 2007).

**Factor Conditions: Thailand**

Thailand has a pleasant natural environment and a good climate overall all year long. It has a reasonably strong road infrastructure and there are major international airports with global connectivity. Thailand also enjoys a central geographical location in South East Asia which provides closeness to other emerging economies like Indonesia and Malaysia. Thailand has a high literacy rate as compared to its neighbours, which increases the quality of its labour

force. But the factor that reduces the competitiveness of the labour force is its lack of proficiency in the English language (Sethaput 2006). According to an often cited HBS study, providing high quality of services is a part of the Thai culture (Sethaput et al 2006, Wilson 2007).

Cost - Advantage Thailand: Generally an important factor enjoyed by most South East Asian countries

engaged in medical tourism is the cost advantage. The cost of medical treatment in Thailand is significantly lower than the cost of similar treatment in western countries.

This affordable care is offered at a significant cost advantage while the outcomes of the treatment are similar to the tourist's country of residence (Turner2007).

Table 1: Cost Comparison

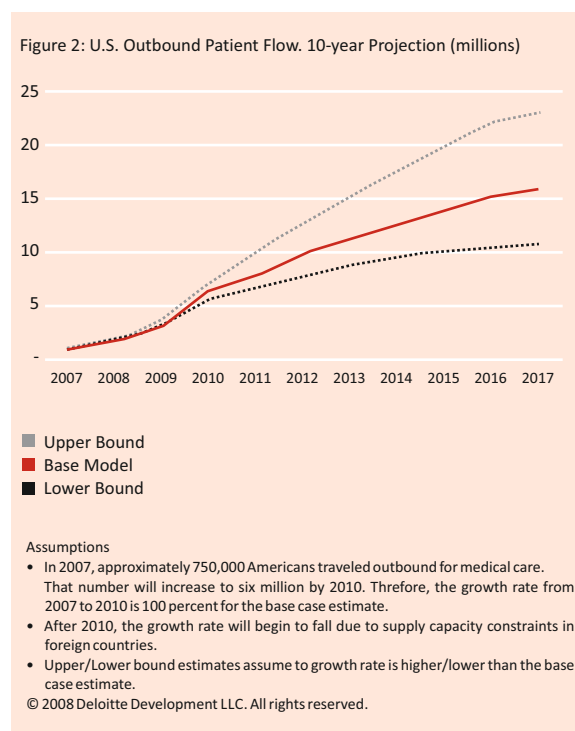
Types of Treatment	U.S.	Singapore	Thailand	Malaysia	India
Cardiac Procedure	50,000	30,000	13,500	NA	4,500
Hip Replacement	35,000	NA	12,000	6,000	6,500
Face Lift	10,000	NA	4,000	2,500	2,600

Source: Turner (2007)

### Demand Conditions:

An important dimension of the industry is what is termed as “demand conditions” which refers to the nature of customer preferences in regions, which are important for the entrepreneurs as they directly influence the performance of firms.

According to Potter, local demand for healthcare provides an impetus to the countries to upgrade their competitive advantages. Competitive success is more likely in an industry where there is a strong local demand (Potter 1998). The demand promotes innovation, improving the quality standards thereby leading to an overall improvement in the industries. In both India and Thailand, medical tourism has proved instrumental in further development of medical expertise. The local healthcare organisations also draw heavily on regional demand as a source of revenues and employment of medical professionals (Shane 2004).



Source: Deloitte 2008

Figure 2: Out bound patient flow from the US

### **Demand conditions in India**

In the case of Medical Tourism, the local and regional demand has led to the rapid development of medical capability. India is emerging as a preferred world leader in providing top end specialist medical care like cardiac procedures. Thailand has created for itself areas of specialised medical competence e.g. gender reassignment procedures. International demand for healthcare has been supported by the rise of budget airline industry which has made local travel to south and south-east Asia considerably more affordable and accessible.

The media has also played a role in supporting the medical tourism industry by publishing latest advances in medicine and infrastructure, data about price comparisons and patient testimonials thereby improving patient confidence.

The Indian economy is projected to grow in tandem with the population. Goldman Sachs predicts that the Indian economy will expand at least 5% annually for the next 45 years and will be the only emerging economy to grow at such a robust pace. Growth in the economy is creating a thriving middle class. With increasing purchasing power parity, there will be more disposable income to spend on healthcare thus driving up demand (Price Water House Coopers report (2007).

### **Demand conditions in Thailand:**

The 11.23 million tourists who visit the country each year and the Thai expatriates now demand a comparable quality of healthcare as available in their home countries. The strong local demand for cosmetic procedures in Thailand has also contributed to the overall improvement of the industry (Sethaput2006).

Specific pockets of demand such as gender

reassignment have created a high level of expertise in Bangkok making Thailand a world leader in gender realignment Chanda (2011). Thailand is a world leader in surgical procedures which include face lifts, hair removal, Botox and sex reassignment procedures. The demand for these elective services has led to the generation of specialist expertise in this area of healthcare (Wilson 2011).

### **Context of Firms' Strategy and Rivalry**

One of the key findings of Porter's work on national competitiveness is that successful industries always exist in clusters. In most cases, they enjoy a close relationship with and competitive benefits from other related and supporting sectors. The term 'medical tourism' itself suggests a close relationship between the medical industry and the tourism industry especially when medical treatment and subsequent tourism are coupled. It focuses on dealing with the competitive challenges that exist in a service that carries a high level of risk, requires high levels of credibility and deals with the need for direct marketing (Lee 2007).

### **India:**

A competitive strategy employed by healthcare institutions in India is to gain an affiliation with a world class institution; for instance, India's Wockhardt group of hospitals has signed a memorandum of understanding with the Harvard Medical School. These affiliations offer the institute a leading edge in the latest research in the field while at the same time bringing positive reputational effects to the organisation.

### **Thailand:**

Bumrungrad Hospital became the first internationally accredited hospital in south-east Asia in 2002 after

being accredited by the JCI (Joint Commission International). It pioneered the medical tourism business in Thailand and its total inflow of international patients jumped from 50,000 in 1997 to 350,000 in 2005 Sethaput (2005). In 2011, the hospital treated around 600,000 patients from nearly 180 countries and over 100,000 patients from the middle east capitalizing on the fact that the United States put restrictions on patients from the middle east post 9/11 (IMTJ 2011).

Institutions like Bumrungrad and Piyavate Hospital are accredited by ISO 9001-2000 while Bangkok Hospital Group Medical Centre is accredited by both the ISO and the JCI. Bangkok's Bumrungrad International Hospital boasts of more than 200 US states board certified physicians (Burkett 2007).

### **Related and supporting industries**

Porter grouped countries specializing in particular industries into clusters and suggested that growth in a cluster has spill over benefits beyond the confines of that industry.

#### **India:**

##### **Pharmaceutical Markets:**

In India, a number of supporting industries have grown which contribute to the growth of the medical tourism sector. One such example is the emergence of a robust pharmaceutical industry, which is also one of the fastest growing pharmaceutical markets in the world and is emerging as a successful worldwide exporter of generic drugs (PWC 2007, KPMG report 2006).

The transport industry plays a very important role in making India an attractive industry for medical tourism. The government has allowed 100% FDI in the development of new airports in Bangalore and

Hyderabad. This model led to the successful completion of an operational and a world class airport in less than five years thus increasing the air traffic handling capacity in each of these major cities in India (IEBF)(Prakash 2011).

#### **Thailand:**

One-sixth of the entire population of Thailand lives in the Bangkok metropolitan region. This region has seen efficient infrastructure development due to the economic boom of the 90s with the creation of a world class airport. Beyond that region, severe disparities exist in infrastructure and accessibility (Rietveld 2002).

Bumrungrad Hospital is in partnership with Diethelm Travel which is Thailand's leading inbound tourist organisation. It assists the hospital to liaison with potential patients and helps the patients in selection of suitable treatment abroad (Nagar 2010).

#### **The Role of Government and chance**

According to Porter, "The behaviour of firms must become integral to a theory of national competitive advantage." Hence, Porter proposes answering the fundamental question: 'Why do firms based in particular nations achieve international success in individual segments and industries?' (Porter, 1990). This question introduces the role of the governments on the competitive position of industries and firms.

Thus, the role of the government is an important variable in the determinants of national competitive advantage. It is seen as a vital if not one of the most important factors that influence modern international competition. The government has a potential to influence and to be influenced by each of the four factors mentioned earlier. The government can also be a major buyer of healthcare e.g. the NHS. The

government, according to Porter, has the potential to hurt the nation's industry. Related and supporting industries can be influenced by using its controls on the regulations of advertising, tax policies or market regulations. Thus, according to Porter, the government plays the role of facilitator of the “national diamond” while interacting with the four determinants by fostering of deterring the role of competitive advantage (Mann et al 2011).

### **The Role of Chance**

According to Porter, the determining factors of national advantage outline the environment for competition in particular industries. However according to him, chance events also played a role. These are events that are mainly outside the control of industries or even governments; some examples are significant shifts in the world financial markets, surges of world or regional demand, wars or political decisions made by governments.

### **Discussion and Conclusion**

Trans-national health services or medical tourism is an emerging sector with its own issues, but also with promising facts and figures (Mainil et al 2011). Among the emerging economies, the markets that have seen the most rapid growth in medical tourism are India and Thailand. These markets are projected to be worth US\$ 6 billion by 2012 and are anticipated to grow at a compound growth rate of 17.6% between 2007 and 2012 (Chanda 2011). While the two countries compete with each other in the medical tourism sector, there is a massive difference in the size of the economy and the healthcare industries between them.

India was one of the first countries to recognize the potential of medical tourism and today is the most popular destination for global medical tourists

(Companiesandmarkets.com, McKinsey Quarterly 2008). Thailand enjoys the benefit of being the early entrant in medical tourism with strong demand and factor conditions, fiscal incentives, growth in the GDP and support of the government; these factors have paid rich dividends and resulted in a stable medical tourism industry demonstrating consistent growth (York 2006, Bloomberg News 2012, Wilson 2011).

When considering the competitive position of India and Thailand in the medical tourism industry, the most striking similarity is the fact that they are competing on the basis of a cost price advantage which is common to both. They also offer a comparable range of medical products to a common pool of prospective patients in the west (Chanda 2011). Hence, to sustain their growth as hotspots of medical tourism, these markets will have to diversify into niche areas of treatment products.

Despite the fact that both India and Thailand compete in medical tourism and the participating hospitals offer a similar “menu” of clinical procedures, their healthcare systems are structurally different and are known for excelling in different clinical procedures and thus attract different types of patients. India, with its comparatively large pool of internationally trained surgeons, is making its mark in top end clinical procedures like heart surgery and advanced cancer care (Khanna 2007).

Thailand on the other hand, is widely known for cosmetic procedures. “Sex changes or sex reassignment surgeries” provides a catchy summary of Thailand's competitive niche in the field of cosmetic surgery, but recently Bumrungrad and other early discussed Thai hospitals have started focussing towards more complicated medical procedures



(Wilson 2011, Harryono 2006). These illustrations offer an image capturing the structural and economic reforms that have characterised the globalisation of healthcare through specialised pockets of medical tourism in India and Thailand.

The Indian economy is fundamentally stronger than its Thai counterpart and is forecasted to grow at a minimum of 5% per annum for the next 50 years. India is poised to overtake Thailand as a world leader in the medical tourism industry (Burkett 2007, Pg 227, Arvind Subramanian, 2004, International Monetary Fund). Medical tourism in India and Thailand has moved on from being an evolving and emerging industry to becoming an established industry which involves a multiplicity of stakeholders and beneficiaries. The review of literature, the national diamond analysis and the Bloomberg study all indicate that while there is significant potential for growth within the medical tourism industry in India and Thailand, India will grow faster and has the potential to demonstrate sustained growth in the medical tourism industry for a longer time.

## Appendix

1. India held more than 20% share of medical tourists and market share in Asia in the year 2011. Between the years 2009 and 2011, India saw a 30% rise in the number of medical tourists each year and it is projected that by 2015, Indian hospitals will receive half a million medical tourists every year. This growth is attributed to favourable government policies to aid medical tourism, rapidly developing infrastructure and the increasing number of Joint Commission International (JCI) accredited hospitals (Companiesandmarkets.com) (McKinsey Quarterly 2008).
2. Kingsbury et al (2011), in their work, infer that India is 'high tech' and clinically oriented with compassionate and articulate doctors. They suggest that while cost may be an important factor which brings patients to India, hospitals themselves focus on their international or national accreditation and the fact that they are in a position to provide a wide range of medical procedures to their patients. They emphasise competency, professionalism and quality of their medical care.

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