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Discovering Thoughts, Inventing Future

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# Identifying the Factors of Customer Satisfaction in E- Banking System in Context of Bangladesh

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*Abstract -* The purpose of this paper is to identifying the factors of customer satisfaction in Bangladeshi commercial banks. In this study, purposive sampling technique was employed to recruit 120 customers classified as government service holder, private service holder and businessman from 10 Banks. We have done Kaiser-Meyer-Olkin Measure of Sampling Adequacy, Bartlett's Test of Sphericity, Cronbach's Alpha Reliability Statistics, inter-correlation, factor analysis and factor ranking. This research showed that management information service, service factor, time management and behavioral factor are the key factors which are representing customer satisfaction in banking sector of Bangladesh. Management information services is the combination of 7 variables such as computerized service, innovative service, smooth and hassel free, staff availability, skilled and knowledgeable employee, service charge, transparency in services.

*Keywords :* *e-banking, customer satisfaction, corre-lation, factor analysis.*

*GJMBR-B Classification :* *JEL Code: E59, F43*

IDENTIFYINGTHEFACTORSOFCUSTOMERSATISFACTIONINE-BANKINGSYSTEMINCONTEXTOFBANGLADESH

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Md. Arafat Rahman [α] & Abu Zafar Ahmed Mukul [σ]

*Abstract -* The purpose of this paper is to identifying the factors of customer satisfaction in Bangladeshi commercial banks. In this study, purposive sampling technique was employed to recruit 120 customers classified as government service holder, private service holder and businessman from 10 Banks. We have done Kaiser-Meyer-Olkin Measure of Sampling Adequacy, Bartlett's Test of Sphericity, Cronbach's Alpha Reliability Statistics, inter-correlation, factor analysis and factor ranking. This research showed that management information service, service factor, time management and behavioral factor are the key factors which are representing customer satisfaction in banking sector of Bangladesh. Management information services is the combination of 7 variables such as computerized service, innovative service, smooth and hassel free, staff availability, skilled and knowledgeable employee, service charge, transparency in services. In addition, service factor amalgamation of 3 variables which are service infrastructure, systematic, accurate service and cordial, customer friendly, helpful employee more over time management factor is also the combination of 3 variables such as waiting time, timely information and effective handling of complaint. Finally, commitment of employee and timely services are constitute of behavioral factor. Among major four factors behavioral factor obtain the highest rank comparing with other factor. The paper contributes to previous research by adding to existing knowledge regarding what constitutes e-banking service. The paper makes key recommendations towards enhancing current online financial services delivery.

*Keywords : e-banking, customer satisfaction, correlation, factor analysis.*

## I. Introduction

In business field, Internet is used widely by masses, and has numerous benefits to offer, especially in E-banking services. Now-a-days, people are so busy in their work lives, that they don't even have time to go to the bank for conducting their banking transactions. All banks provide E-banking facility to their customers as an added advantage. E-commerce is about buying and selling information, products and services via computer networks such as the Internet and Electronic Data Interchange. E-banking is one form of e-commerce. More sophisticated e-banking services provide customer access to accounts, the ability to move their money between different accounts, and making payments or applying for loans via e-Channels. E-banking largely came into being as a result of technological developments in the field of computing and communications but there have been a number of other factors or challenges which played an important part in its development. The challenges for banks are fourfold. First, they need to satisfy customer requirements that are complex and ever changing. Second, they need to deal with increased competition from old as well as new entrants coming into the market. Third, they need to address the pressures on the supply chain to deliver their services quickly. Finally, they must continually develop new and innovative services to differentiate themselves from the competition, as having a large branch network is no longer seen as a main source of competitive advantage. E-banking is seen by many banks as a key tool to address these challenges. There are few number of commercial banks are providing e-banking service in the context of Bangladesh such as Dutch-Bangla Limited (DBBL), Hongkong Sanghai Banking Corporation (HSBC), Bank Asia Limited, Eastern Bank Limited (EBL), Citi Bank, Standard Chartered Bank (SCB), Brac Bank Limited, Arab Bangladesh Bank Limited etc. As a third world developing country, Bangladesh is far behind to reach the expected level in global banking system. So it is our urgent need to upgrade its banking system. Kumbhar (2011) found that study evaluates major factors (i.e. service quality, brand perception and perceived value) affecting on customers ‘satisfaction in e-banking service settings. This study also evaluates influence of service quality on brand perception, perceived value and satisfaction in E-banking. Liao et. al (2002) conducted survey that banks have laid its emphasis on the implementation on mobile banking services because it shed the light on reduce costs, sustain competitive advantage, create greater convenience to users, and serving unbanked customers. Zeithaml, et al, (1988) they found that there is very strong relationship between quality of service and customer satisfaction. Parasuraman et al, (1985; 1988) they found that increase in service quality of the banks can satisfy and develop attitudinal loyalty which ultimately retains valued customers. Nadiri, et al (2009) also focused that the higher level of perceived service quality results in increased customer satisfaction. When perceived service quality is less than expected service quality customer will be dissatisfied. Cronin et.al (1992) also conducted survey that satisfaction super ordinate

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to quality-that quality is one of the service dimensions factored in to customer satisfaction judgment. Pairot (2008) defined that Customer's satisfaction as the company's ability to fulfill the business, emotional, and psychological needs of its customers. However, customers have different levels of satisfaction as they have different attitudes and experiences as perceived from the company. Customer's satisfaction is affected by the importance placed by the customers on each of the attitudes of the product/ service. Santhiyavalli (2011) conducted survey that customer service is an integral part of any organization. It is necessary to identify the key success factors in terms of customer satisfaction so as to survive in intense competition and increase the market share. Oliver (1980) also concentration on cognition has been studied mainly in terms of the expectations/disconfirmation paradigm; also known as the confirmation/disconfirmation paradigm, which states that expectations originate from the customer's beliefs about the level of performance that a product/service would provide. Rangsan et. al (2013) find the internet banking service dimensions that will have the impact on customer satisfaction among top three banks in the Bangkok area: Bangkok Bank, Kasikorn Bank and Siam Commercial Bank. Questionnaires were used to collect data from by using quota sampling and providing online registration times were the important factors that have the impact on customer satisfaction. Ankit (2011) investigates that Banking Needs, followed by Core Services, Problem Resolution, Cost Saved, Convenience and Risk and Privacy Concerns were the major factors that strongly affect the overall satisfaction of online consumers. On the other hand, Feature Availability and Consumer Continuation were found to moderately affect the overall satisfaction of customers using Online or Internet banking services. Biswas (2012) identify the factors responsible for determining the customer satisfaction in respect of banking services and rank those factor responsible for customer satisfaction in banks. Santhiyavalli (2011) conducted a study that main objective are study the customer's perception of service quality of the select branches of State Bank of India and study the major factors responsible for their satisfaction. Singh. J. et. al (2011) identify the factors affecting satisfaction level of customers of Indian universal banks; and analyze the impact of these factors on customer satisfaction.

*Objectives of the Study*

Basic objectives of the study are given below:

i. To analyze the level of customer satisfaction towards e-banking service.
ii. To identify the factors responsible for customer satisfaction in respect of e-banking service quality.
iii. To rank factors affecting customer satisfaction towards e-banking service.

## II. Methodology

The study has been done mainly based on primary and secondary sources of data or information. Primary data has been collected from Dhaka based 10 (ten) commercial banks names Dutch-Bangla Limited (DBBL), Hongkong Sanghai Banking Corporation (HSBC), Bank Asia Limited, Eastern Bank Limited (EBL), Citi Bank, Standard Chartered Bank (SCB), Brac Bank Limited, Arab Bangladesh Bank Limited, United Commercial Bank Limited (UCBL), EXIM Bank Limited which are taken randomly from January to March, 2013. These banks are considered as the private commercial banks and foreign banks respectively. Primary data collections are done by the interviewing method with proper questionnaire. A specifically designed questionnaire was used as a tool and the survey covered a sample of 120 respondents for the purpose of analysis for 10 different commercial banks. The criteria of respondent were 4 government service holder, 4 private service holder and 4 businessman total 12 respondent for each branch. Further, the 15 variables used for factor analysis were coded using 5 point scale likert scale ranging from 5 to 1 For example, 'Highly Satisfied' was ranked 5 followed by 'Satisfied' with 4, 'Neither Satisfied nor Dissatisfied' with 3, 'Dissatisfied' with 2 and 'Very Dissatisfied' with 1.

## III. Discussion and Analysis

*Table 1 :* Descriptive statistics of variables

| Variables | Mean | Standard Deviation |
|---|---|---|
| Computerized Service (V1) | 3.76 | 1.145 |
| Service Infrastructure (V2) | 3.37 | 0.970 |
| Innovative Service (V3) | 3.28 | 0.945 |
| Systematic and Accurate Service (V4) | 3.77 | 0.932 |
| Smooth ,Hassel free (V5) | 3.86 | 1.183 |
| Timely Services (V6) | 3.87 | 0.970 |
| Staff Availability (V7) | 3.67 | 0.956 |
| Waiting Time (V8) | 3.39 | 1.125 |

| | | |
|---|---|---|
| Timely Information (V9) | 3.68 | 0.979 |
| Commitment of Employee (V10) | 3.58 | 1.034 |
| Skilled, knowledgeable Employee (V11) | 4.05 | 1.107 |
| Cordial, Customer friendly, Helpful employee (V12) | 3.89 | 1.083 |
| Service Charge (V13) | 3.13 | 1.263 |
| Transparency in Services (V14) | 3.48 | 1.053 |
| Effective Handling of Complaint (V15) | 3.61 | 1.311 |

*Source : Computed from Primary Data.*

From this table, we can see that mean value for all variables are above 3 that mean the variables are lie between 'Satisfied' and 'Neither Satisfied nor Dissatisfied'. Surprisingly the mean value of Skilled, knowledgeable employee (V11) is 4.05 that mean the customers are more satisfied with e-banking service in respect to Skilled, knowledgeable employee.

To investigate the appropriateness of factor analysis Kaiser-Meyer-Olkin (KMO) and Bartlett's test statistic was used which were shown in table-2 and table-3 respectively. If, the KMO value is greater than 0.6 is considered as adequate (Kaiser and Rice, 1974). A value of greater than 0.5 is desirable. Bartlett's test measures the correlation of variables. A probability of less than 0.5 is acceptable (Singh and Jain, 2009). From our analysis we found that the value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy is .762 that is greater than 0.06 indicates the value of Kaiser-Meyer is acceptable and the value of Bartlett's Test of Sphericity is also statistically significant and acceptable.

*Table 2 :* KMO and Bartlett's Test result for e-banking

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .762 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 845.706 |
| | df | 105 |
| | Sig. | .000 |

*Source : Computed from Primary Data.*

*Table 3 :* Cronbach's Alpha Reliability Statistics

| Cronbach's Alpha | Number of Items |
|---|---|
| .877 | 15 |

*Source : Computed from Primary Data.*

To check multidimensionality of customer services and satisfaction, coefficient alpha was computed separately for all variables identified. In the present study, alpha coefficients value was 0.877, which is much higher than 0.7, indicating good consistency among the items variables and for a measure to be acceptable, coefficient alpha should be above 0.7 (Nunnally, 1978).

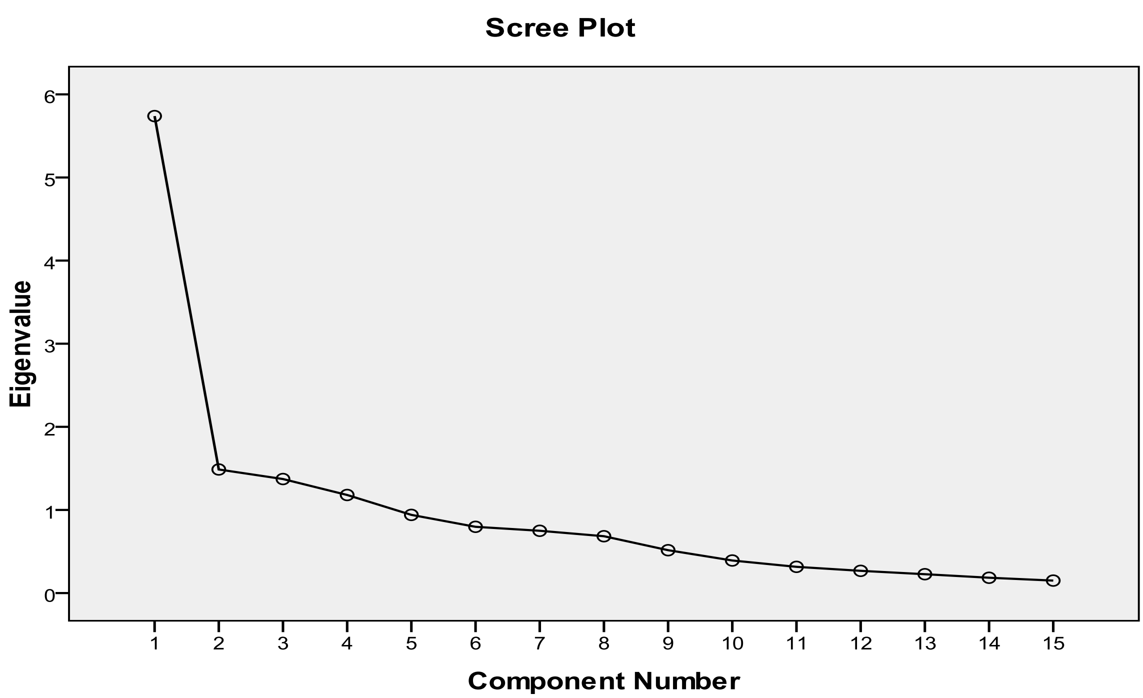


*Figure 1 :* Scree plot showing the eigen values

The scree test was used to identify the optimum number of factors that can be extracted before the amount of unique variance begins to dominate the common variance structure. The scree test was derived by plotting the latent roots against the number of factors in their order of extraction, and the shape of the resulting curve was used to evaluate the cutoff point (Cattel, 1966). The scree plot demonstrated (Figure 1) the eigen values for initial 15 components or factors extracted in the study. Starting with the first factor, the plot slopes steeply downward initially and then slowly became an approximately horizontal line. The point at which the curve first begins to straighten out was considered to indicate the number of factors to extract. In the present case, as we have the eigen value more than 1, hence, 4 factors have been considered. All factors beyond 1 for which these eigen value level off were excluded from consideration (Cattel and Vogelman, 1977).

*Table 4 :* Inter-correlation of variables

| | V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | V9 | V10 | V11 | V12 | V13 | V14 | V15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V1 | 1 | | | | | | | | | | | | | | |
| V2 | 0.49** | 1 | | | | | | | | | | | | | |
| V3 | 0.60** | .35** | 1 | | | | | | | | | | | | |
| V4 | 0.31** | .47** | .17 | 1 | | | | | | | | | | | |
| V5 | 0.55** | .55** | .33** | .41** | 1 | | | | | | | | | | |
| V6 | 0.27** | .23* | .133 | .31** | .42** | 1 | | | | | | | | | |
| V7 | 0.54** | 0.41** | .37* | .29** | .58** | 0.2* | 1 | | | | | | | | |
| V8 | 0.22** | 0.23* | 0.08 | 0.12 | 0.30** | 0.19* | 0.30** | 1 | | | | | | | |
| V9 | 0.16 | 0.08 | -0.13 | 0.20* | 0.32** | 0.09 | 0.23* | 0.24** | 1 | | | | | | |
| V10 | 0.45** | 0.35** | 0.24** | 0.26** | 0.29** | 0.61** | 0.27* | 0.37** | -0.04 | 1 | | | | | |
| V11 | 0.53** | 0.38** | 0.41** | 0.31** | 0.46** | 0.34** | 0.60** | 0.05 | 0.13 | 0.46** | 1 | | | | |
| V12 | 0.53** | 0.31** | 0.42** | 0.43** | 0.29** | 0.35** | 0.40** | 0.19* | 0.36** | 0.33** | 0.39** | 1 | | | |
| V13 | 0.39** | 0.29** | 0.32** | 0.19* | 0.28** | 0.19* | 0.22* | 0.07 | 0.13 | 0.38** | 0.43** | 0.28** | 1 | | |
| V14 | 0.54** | 0.36** | 0.57** | 0.01 | 0.60** | 0.25** | 0.47** | 0.18* | 0.06 | 0.22* | 0.47** | 0.32** | 0.43** | 1 | |
| V15 | 0.62** | 0.34** | 0.39** | 0.25** | 0.56** | 0.18* | 0.52** | 0.39** | 0.31** | 0.43** | 0.49** | 0.37** | 0.25** | 0.33** | 1 |

*Source : Computed from Primary Data.*

Inter-correlation among the variables were calculated and presented in the table-4. Almost all the cases, correlation coefficient of variables were found statistically significant, hence included as the factor influencing the level of customer satisfaction in respect of banking services. The inter-correlation analysis suggests that out of 15 variables 4 were closely related as the values of correlation co-efficient were relatively high in their cases. This indicated that all these variables could be reduced to 4 factors. These variables demonstrated higher correlation coefficients and were statistically significant at 1 percent and 5 percent level. The meaningful way was to look for substantive significance by deciding on the minimum contribution a factor should make 1 percent and 5 percent (Cattel, and Vogelman, 1977).

*Table 5 :* Total variance explained

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Component | Initial Eigen values | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.739 | 38.258 | 38.258 | 5.739 | 38.258 | 38.258 | 3.911 | 26.072 | 26.072 |
| 2 | 1.487 | 9.911 | 48.169 | 1.487 | 9.911 | 48.169 | 1.991 | 13.274 | 39.346 |
| 3 | 1.372 | 9.145 | 57.314 | 1.372 | 9.145 | 57.314 | 1.988 | 13.252 | 52.598 |
| 4 | 1.180 | 7.867 | 65.181 | 1.180 | 7.867 | 65.181 | 1.888 | 12.583 | 65.181 |
| 5 | .941 | 6.271 | 71.453 | | | | | | |
| 6 | .797 | 5.314 | 76.766 | | | | | | |
| 7 | .749 | 4.996 | 81.762 | | | | | | |
| 8 | .684 | 4.559 | 86.321 | | | | | | |
| 9 | .516 | 3.438 | 89.759 | | | | | | |
| 10 | .392 | 2.612 | 92.371 | | | | | | |
| 11 | .316 | 2.103 | 94.475 | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 | .267 | 1.783 | 96.258 | | | | | | |
| 13 | .227 | 1.512 | 97.770 | | | | | | |
| 14 | .184 | 1.230 | 98.999 | | | | | | |
| 15 | .150 | 1.001 | 100.000 | | | | | | |

*Source : Computed from Primary Data.*

The first step in interpreting the output was to look at the factors extracted, their eigen values and the cumulative percentage of variance. We could see from the cumulative percentage column that the importance of the attributes (i.e. 4 factors) extracted together account for 65.18 % of the total variance (information contained in the original 15 variables). This indicates that we lost only 34.82% of the information contained into the original variable. Now, the most important thing was that of interpreting what these 4 extracted factors represent out of 120 samples.

*Table 6 :* Factor loading along with eigen value

| Component Matrix | | | | |
|---|---|---|---|---|
| | Component | | | |
| | Factor-1 | Factor-2 | Factor-3 | Factor-4 |
| Transparency in Services(V14) | **.820** | -.097 | .138 | .098 |
| Innovative Service(V3) | **.805** | .132 | -.115 | .019 |
| Computerized Service (V1) | **.728** | .307 | .225 | .178 |
| Skilled, knowledgeable Employee(V11) | **.643** | .314 | .102 | .238 |
| Smooth, Hassle Free(V5) | **.621** | -.055 | .540 | .210 |
| Staff Availability(V7) | **.602** | .230 | .452 | .009 |
| Service Charge(V13) | **.509** | .203 | -.059 | .233 |
| Systematic and Accurate Service(V4) | .045 | **.881** | .062 | .170 |
| Coradial, Customer friendly, Helpful Employee(V12) | .324 | **.685** | .240 | .130 |
| Service Infrastructure (V2) | .440 | **.463** | .071 | .170 |
| Timely Information(V9) | -.085 | .322 | **.761** | -.158 |
| Waiting Time(V8) | .035 | -.085 | **.644** | .428 |
| Effective Handling of Complaint(V15) | .499 | .183 | **.569** | .127 |
| Commitment of Employee(V10) | .255 | .168 | .039 | **.867** |
| Timely Services(V9) | .126 | .204 | .103 | **.790** |

*Source : Computed from Primary Data.*

In this study, we have considered the highest value in a given row which is shown in table-6.From this table, we can see that factor-1 is a group of 7 (seven) variables names Computerized service, Innovative Service, Smooth and Hassel free, Staff availability, Skilled and knowledgeable employee, Service Charge, Transparency in services had loading 0.728, 0.805, 0.621, 0.602, 0.643, 0.509, 0.820 respectively. Factor-2 is combination of 3 variables Service Infrastructure, Systematic, Accurate Service and Cordial, Customer friendly, Helpful employee had loading 0.463, 0.881, and 0.685 respectively. Factor-3 is combination of 3 (three) variables Waiting Time, Timely Information and Effective handling of Complaint had loading 0.644, 0.761, and 0.569 respectively. Factor-4 is included 2 (two) variables Commitment of employee and Timely Services had loading 0.790, 0.867 respectively.

*Table 7 :* Factor affecting customer satisfaction

| Factor | Variables |
|---|---|
| Management Information service (Factor-1) | Computerized Service (V1), Innovative Service (V3), Smooth and Hassel Free (V5), Staff Availability (V7), Skilled and Knowledgeable Employee(V11), Service Charge(V13), ransparency in Services(V14). |
| Service Factor (Factor-2) | Service Infrastructure (V2), Systematic, Accurate Service (V4) and Cordial, Customer friendly, Helpful Employee (V12). |
| Time Management (Factor-3) | Waiting Time (V8), Timely Information (V9) and Effective handling of Complaint (V15). |
| Behavioral Factor (Factor-4) | Commitment of Employees (V10) and Timely Services (V6). |

*Source : Computed from Primary Data.*

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*Table 8 :* Factor Ranking

| Factor | Mean value | Factor ranking |
|---|---|---|
| Management Information service (Factor-1) | 3.60 | 3 |
| Service Factor (Factor-2) | 3.67 | 2 |
| Time Management (Factor-3) | 3.55 | 4 |
| Behavioral Factor (Factor-4) | 3.73 | 1 |

*Source : Computed from Primary Data.*

Mean value of each factor is calculated based on the mean value of all variables included under a particular factor. In addition, factor ranking has been done based on the mean value.

## IV. Conclusion

In our study most of the variables are correlated with each other. Among 15 variables 4 major factors are responsible for customer satisfaction in banking system. These factors are named Management Information service (Factor-1), Service Factor (Factor-2), Time Management (Factor-3) and Behavioral Factor (Factor-4). Moreover, basis on mean value factor ranking has been made. E-banking, the latest generation of electronic banking transactions, opened up new window of opportunity to the existing banks and financial institutions. Most of the banks have their own websites but not all of them offered internet facilities. The main reason of this was that the banks did not have the IT infrastructure and proper security features. The Ministry of Science, Information and Communication Technology went out the policy for the development in the IT sector. This research seeks to make an original contribution to knowledge by investigating the impact of e-banking factors on outcomes of customer satisfaction in the commercial banks industry in Bangladesh. This research contributes to the services marketing discipline in finding out the role of the e-banking in enhancing customer satisfaction and loyalty. However, with banking customers growing increasingly comfortable with the digital lifestyle, but Bangladeshi customers were not aware about e-banking in Bangladesh. They were not fully understand the power of technology and seek to leverage it to enjoy better control over their banking operations. To conclude that e-banking also provided other benefits. For instance, creating new markets, and reducing operational costs, administrative costs and workforce are increasingly important aspects for the banks competitiveness, and e-banking improved these aspects as well. So, Bangladeshi banks should take these advantages of e-banking in Bangladesh economy as early as possible.

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# Job Stress- Employees Performance and Health: A Study on Commercial Bank in Bangladesh

By Md. Hasebur Rahman
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*Abstract -* Stress is an inevitable feature of work and personal life. Some organizations are low stress, healthy environment, whereas others are high-stress environments that may place their employees' health at risk. The experience of orga-nizational justice and fairness is emerging as one contextual factor at work that leads to a positive low-stress work environment. This study is an initiative to explore how does job stress influences on work performance and health of employees in contemporary commercial banks in Bangladesh. It is statistically significant that stress has a positive relationship with employee's performance. Study also reveals that there is an adverse relationship with stress and health of employee's wellbeing in commercial banks in Bangladesh. Long working hour and workload have perceived as top most stressors of both public and private commercial banks in Bangladesh.

*Keywords : stress, employees, bank, commercial, performance, health.*
*GJMBR-B Classification : JEL Code: J28, J64*

JOBSTRESS-EMPLOYEESPERFORMANCEANDHEALTHASTUDYONCOMMERCIALBANKINBANGLADESH

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## I. Introduction

Job stress becomes an important agenda for managers and management scholars now a days and it will remain in future. There is considerable evidence that most managers and employees report feeling work related stress (Cavanaugh, Wendy, Boswell, Mark, Roehling, Boudreau, 2000) and resent environment is making things worse. Stress is still one of the most important and serious problems facing the field of organizational behavior.

Banking job is now one of the challenging and dynamic professions in Bangladesh. Large number employees serve banking customer at competitive pressure. Due to increasing workload, job insecurity, and pressure to perform, employees of commercial bank in Bangladesh working long hours. As a result, there is much concern that stress level are on the rise, which leads to negative organizational outcomes such as absenteeism, decreased performance, and escalating medical expenses. Employees who become distress mentally and physically due to working long hours experience work overload.

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## II. Literature Review

### a) Concept Job Stress

Stress is still one of the most important and serious problems facing the field of organizational behavior. Stress is usually thought of in negative term applied to the pressures people feel in life. The presence of stress at work is almost inevitable in many jobs. Although there are numerous definitions and much debate about the meaning of job stress, Ivancevich and Matteson (1993) defines stress simply as "the interaction of the individual with the environment". Beehr and Newman (1978) define job stress as "a condition arising from the interaction of people and their jobs and characterized by changes with in people that force them to deviate their normal functioning." Stress can be comprehensively defined as an adaptive response to an external situation that results in physical, psychological, and/ or behavioral deviations for organizational participants (Luthans, 2011).

### b) Job Stress and Employees Performance

Applied to the work place, a large study by researchers at Cornell University of 1800 managers identified examples of "bad" stress as office politics, red tape, and a stalled career and "good "stress as challenges that come with increased job responsibility, time pressure, and high quality assignments. A recent Meta– analysis found that hindrance stressors (organizational politics, red tape, role ambiguity, and in general those demands unnecessarily thwarting personal growth and goal attainment) had a negative effect on organizational performance. On the other hand, so called challenge stressors (high workload, time pressure, high responsibility and in general those demands that viewed as obstacles to be overcome in order to learn and achieve) were found to have effect on motivation and performance. The Yerkes-Dodson law (1908) indicates that stress leads to improved performance up to an optimum point. Beyond the optimum point, further stress and arousal have detrimental effect on performance. Therefore, healthy amounts of eustress are desirable to improve performance by arousing a person to action. It is in the midrange of the curve that the greatest performance benefits from stress are achieved.

*c) Job Stress and Employees Health*

i. *Physical Health*

Stress also leads to physical disorder, because the internal body system changes to try to cope with stress (Newstrom 2010). "Some physical disorders are short-range, such as an upset stomach. Others are longer-range, such as a stomach ulcer. Stress over a prolonged time also leads to degenerative diseases of the heart, kidneys, blood vessels, and other parts of the body. It can result in angina (severe chest pain) and tension headaches." When stress becomes excessive, employees develop various symptoms of stress that can harm their job performance and health, and even threaten their ability to cope with the environment.

ii *Mental Health*

Work related psychological disorders are among ten leading health disorders and diseases in United States, according to the National Institute for Occupational Safety and Health. The most common types of psychological distress are depression, burnout and psychosomatic disorders. Behavior-related symptoms include changes in productivity, absence, and turnover, as well as changes in eating habits, increasing smoking or consumption of alcohol, rapid speech, fidgeting, and sleep disorders (Croon, Sluiter, Blonk, Broersen, and Frings-Dresen 2004). Individual and organization can buffer the ill effects of stress by enhancing coping strategies. Exercise regularly, eating a healthy diet, and taking time to relax are some ways individual can reduce stress. Organizations, too, can help by establishing a supportive climate, having well-designed jobs, and reducing role conflict and role ambiguity.

## III. Research Hypotheses

From the literature review it is seen that, there has been a significant amount of research investigating the stress-performance relationship. Most widely studied pattern in the stress performance literature is the inverted–U relationship. The logic underlying the inverted U is that low moderate levels of stress stimulates the body and increase its ability to react. Individuals than often perform their task better, more intensely, or more rapidly. But too much stress places unattainable demand on a person, which result in lower performance. Therefore, first hypothesis of the study is:

*$H_1$ : Higher job stress result in lower employee performance in commercial bank in Bangladesh.*

Previously discussed literature also shows that high level of job stress wear down the individual and saps energy resources (physical, psychological and behavioral damage). Even though moderate levels of stress can have a negative influence on performance over the long term period of time. From these evidences found in the literature, researcher developed the following hypothesis:

*$H_2$ : Higher job stress has negative impact on employee health.*

According to the theory developed by Hans Selye (1976) the human body cannot instantly rebuilt its ability to cope with stress once it is depleted. Most the early concern with stress was directed at physiological symptoms lead to the conclusion that stress increase heart and breathing rates, increase blood pressure, bring on headaches, and induce heart attacks. Stress shows itself psychological states- for instance, tension, anxiety, irritability, boredom and procrastination (Robbins 2009).

Job stress, employee performance and employee health in commercial bank in Bangladesh were studied with respect to these constructs. In order to measure the constructs, ten questions are presented.

## IV. Methodology

*a) Instrument for Data Collection*

This study mainly based on primary data originating from a survey. For this purpose a constructed questionnaire was developed. Excepting the questions regarding demographic characteristics of the respondents the issues relating to job stress, employee performance and employee health were investigated through 5 point Brayfield-Rothe Scale (1951) based questions.

A pilot study on 10 respondents was conducted using the draft questionnaire. As the outcome of this phase few initially selected variables were dropped to avoid multicoliniarity problem. As well some rephrasing was done to arrive at final version of questionnaire for this study. Final questionnaire was put into operation by the way of mail and personal survey.

*b) Sample*

Because of the lack of sampling frame, convenient method of sampling was used. There was no source available for the address of the employees of commercial bank. Therefore, friends, relatives, and other informal reference group were used to locate the potential respondents from commercial bank in Bangladesh. Questionnaires were sent by email and postage mail to 120 employees working in commercial bank in sample organization. Number of initial replies received was 65. After a screening first round replies a second round personal contract conducted by researcher and finally 80 respondents were taken for this study.

*c) Analysis of Data*

A sample consists of 80 employees working at the executive positions in the sample organization. The data for the present study are obtained by the administration of a questionnaire comprising two parts.

The first part contains columns for personal information and the second one includes 'job stress, employees performance and employees health' scale as constructed and standardized by Brayfield-Rothe Scale (1951). The scale consists of 10 statements concerning Job stress-employee performance and job stress-employee health. For each statement has five options/ points such as strongly agree/ 5, agree/ 4, undecided/ 3, disagree/ 2, and strongly disagree/ 1.Descriptive-statistical technique such as mean and standard deviation were used to measure the mean scores and their variability. One sample t test was used to scores of each statement.

## V. Results and Discussion

*a) The Relative Intensity of Stressors Perceived by Employees*

Table 1 represents the relative intensity of stressors perceived by employees.

*Table 1 :* The Relative intensity of stressors perceived by employees at work

| Stress Stressors | Public Commercial Bank | | | Private Commercial Bank | | |
|---|---|---|---|---|---|---|
| | Ranking | $\overline{X}$ | $\sigma$ | Ranking | $\overline{X}$ | $\sigma$ |
| Long working hour | 1 | 4.42 | 1.010 | 1 | 4.50 | .751 |
| Workload | 2 | 4.23 | .862 | 2 | 4.15 | .802 |
| Family Sympathy | 3 | 4.03 | .862 | 5 | 3.52 | 1.132 |
| Management Pressure | 4 | 3.65 | 1.099 | 4 | 3.63 | 1.005 |
| Mental Depression | 5 | 3.55 | 1.218 | 7 | 3.00 | 1.062 |
| Deadline | 6 | 3.48 | 1.132 | 3 | 3.65 | .893 |
| Poor Working Conditions | 7 | 3.23 | 1.310 | 10 | 2.08 | 1.248 |
| Physiological sickness | 8 | 2.78 | 1.387 | 9 | 2.15 | 1.122 |
| Role Ambiguity | 9 | 2.50 | 1.155 | 8 | 2.30 | 1.137 |
| Job Insecurity | 10 | 2.38 | 1.234 | 6 | 3.20 | 1.305 |

*Source : Field Survey, 2013.*

It is found from the table1 that as a whole, the long working hour and workload remain top most stressors of both public and private commercial banks. Family sympathy holds 3$^{rd}$ perceived stressor for public commercial bank and 4$^{th}$ for private commercial bank. Pressure from management remain modest perceived rank both types of commercial banks. Employees of public commercial bank perceive relatively slightly high mental depression than private commercial bank, ranking 5$^{th}$ and 7$^{th}$ respectively. There is relatively low deadline perceived by public commercial banks than private commercial bank, ranking 6$^{th}$ and 3$^{rd}$ respectively. Relatively high poor working condition for public and low perceived stress for private, ranking 7$^{th}$ and 10$^{th}$ issues respectively. Physiological sickness is slightly high for public than private ranking stress 8$^{th}$ and 9$^{th}$ respectively. There slightly high role ambiguity for public than private ranking 8$^{th}$ and 9$^{th}$ relative perceived stressor respectively. However job insecurity remains last stressor for public and 6th issue for private commercial bank.

*b) Perception about Job Stress and Employees Performance*

This section represents and discusses the result of test of hypothesis ($H_1$). Table 2 shows the perception scores of the respondents on job stress and job performance.

*Table 2 :* The perceptions scores of the respondents on job stress and job performance

| One-Sample Statistics | | | | | | |
|---|---|---|---|---|---|---|
| Statements | N | $\overline{X}$ | $\sigma$ | t | df | Sig. (2-tailed) |
| Competitiveness at work | 80 | 4.31 | .704 | 54.766 | 79 | .000 |
| Fast working speed at work | 80 | 4.09 | .697 | 52.447 | 79 | .000 |
| Pressing deadline at work | 80 | 3.58 | 1.065 | 30.033 | 79 | .000 |
| Doing Multiple tasks | 80 | 3.76 | 1.022 | 32.934 | 79 | .000 |
| Perform better for promotion | 80 | 4.29 | .766 | 50.045 | 79 | .000 |
| Average: | 80 | 4.00 | .850 | 44.047 | 79 | .000 |

Table 2 summarizes the findings of the statements related to the employee's perception of public and private commercial about relationship on job stress and work performance. From the table, it can be observed that there is positive relation between job stress and performance of employees of commercial bank in Bangladesh. Above the table summarized five stressful statements, scoring mean is above the middle value (2.5) and there for average value of competitiveness at work, fast working speed at work, pressing deadline at work, doing multiple tasks and perform better for promotion are statistically significant to work performance (p>.05). Therefor $H_1$ hypothesis *"Higher job stress result in lower employee performance in commercial bank in Bangladesh"* is statistically rejected at 5% level of significance.

*c) Perception about Job Stress and Employees Health*

This section represents and discusses the result of test of hypothesis ($H_2$) Table 3 shows the perception scores of the respondents on job stress and employees health.

*Table 3 :* The perceptions scores of the respondents on job stress and employees health

| One-Sample Statistics | | | | | | |
|---|---|---|---|---|---|---|
| Statements | N | $\overline{X}$ | $\sigma$ | t | df | Sig. (2-tailed) |
| Boringness at work | 80 | 2.90 | 1.420 | 18.272 | 79 | .000 |
| Family sickness at work | 80 | 3.34 | 1.312 | 22.761 | 79 | .000 |
| Medical expenditure for stress at work | 80 | 2.34 | 1.201 | 17.413 | 79 | .000 |
| Feeling tension at work place | 80 | 3.23 | 1.273 | 22.666 | 79 | .000 |
| Behavior modification by jobs | 80 | 3.81 | 1.159 | 29.412 | 79 | .000 |
| Average: | 80 | 3.124 | 1.273 | 22.105 | 79 | .000 |

Table 3 summarizes the findings of the statements related to the employee's perception of public and private commercial about relationship on job stress and employees health. From the table it can be observed that there is positive relation between job stress and employees health of commercial bank in Bangladesh. Above the table summarized five stressful statements relate to mental and physical health of employees scoring mean is above the middle value (2.5) and there for average value of, boringness at work, family sickness at work, medical expenditure for stress at work, feeling tension at work place and behavior modification by jobs are statistically significant to employees health (p>.05). Therefor $H_2$ hypothesis *"Higher job stress has negative impact on employee health"* is hold good and statistically accepted at 5% level of significance.

## VI. Conclusion

The study reveals that employees of commercial banks do stressful jobs due to stressors like long working hour, workload, deadline, management pressure etc. there has been positive relationship observed between stress and employees performance in Bangladesh. It also statistically proved that employees wellbeing psychologically and physically depress if stress prolong over the period of time. Effective job design, healthy working environment, justifiable remuneration should be offered to employees being motivated in competitive jobs like employees of commercial bank in Bangladesh.

This research also open the avenue for further research on various issues relating to job stress, employees performance and physical & mental health of organizational participants. Further research can be carried out to find out what are the factors responsible for positive relationship observe on stress-performance relationship in commercial bank in Bangladesh.

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# Prospect and Potential of Green Jobs towards Green Economy in Bangladesh: A Situation Analysis

By Khalid Md. Bahauddin & Nayma Iftakhar
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*Abstract -* The prospects and potential of green jobs in Bangladesh are huge. There are many potential sectors such as renewable energy, buildings and construction, tran-sportation, basic industries, agriculture and forestry etc are the priority areas for the future green job market. In 2009, numbers of approximate green jobs were 748,701 while it increased in 2010 which was about 811,268. It is true the green jobs sector is growing in Bangladesh, but there are also challenges that need to be overcome to accelerate growth. This paper tried to investigate the outlook and potential of green jobs in Bangladesh as well as also make recommendation some ideologies, basic principles as well as reform of policy mechanism to promote and develop of green jobs in Bangladesh.

*Keywords : green jobs, bangladesh, green economy, policy, principal.*

*GJMBR-B Classification : JEL Code: J64, J62*

PROSPECTANDPOTENTIALOFGREENJOBSTOWARDSGREENECONOMYINBANGLADESHASITUATIONANALYSIS

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# Prospect and Potential of Green Jobs towards Green Economy in Bangladesh: A Situation Analysis

Khalid Md. Bahauddin [α] & Nayma Iftakhar [σ]

*Abstract* - The prospects and potential of green jobs in Bangladesh are huge. There are many potential sectors such as renewable energy, buildings and construction, transportation, basic industries, agriculture and forestry etc are the priority areas for the future green job market. In 2009, numbers of approximate green jobs were 748,701 while it increased in 2010 which was about 811,268. It is true the green jobs sector is growing in Bangladesh, but there are also challenges that need to be overcome to accelerate growth. This paper tried to investigate the outlook and potential of green jobs in Bangladesh as well as also make recommendation some ideologies, basic principles as well as reform of policy mechanism to promote and develop of green jobs in Bangladesh.

*Keywords :* *green jobs, bangladesh, green economy, policy, principal.*

## I. Introduction

Bangladesh is a low energy-consuming though energy starved country. About 60% of the population is not connected to the national grid. A large majority of the 40% that do have access to the national grid live in urban areas. Although Bangladesh has made impressive gains in key human development indicators, more than 63 million people remain below the poverty line. Under employment is pervasive, unemployment levels high amongst the youth, and the informal economy estimated to account for 88% of the overall employment. The Gender Empowerment Measure ranking of 76 shows continued low levels of female ownership of economic assets. To overcome this situation, green jobs can play an additional vital role to achieve green economy as there are many potential sectors in Bangladesh which can generate green jobs. In Bangladesh, green jobs create opportunities for employment for the poor in the renewable energy sector such as solar home systems and bio-gas. Other green jobs could be created in organic, plastic waste and lead acid battery recycling, or by construction projects – such as digging rivers and canals, constructing water reservoirs and building roads. It is true the green jobs sector is growing in Bangladesh, but there are also challenges that need to be overcome to accelerate growth. So to conquer the challenges, some ideologies and basic principles as well as reform of policy must be taken to develop and promote the green jobs in Bangladesh.

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## II. Concept of Green Jobs

The concept of green job is a new one. "Green jobs" does not lend itself to a tight definition but certainly includes direct employment that contributes to the reduction of environmental impact to levels that are ultimately sustainable. This includes jobs that help to reduce the consumption of energy and raw materials, decarbonizes the economy, protect and restore eco-system and biodiversity and minimize the production of waste and pollution. Thus green job aims to preserve the environment for both present and future generations and to be more equitable and inclusive of all people and all countries.

### *a) Environmental Dimension of Green Jobs*

For a modern economy, even in the least developed countries, a complete mapping of links between the environment and economy is a major challenge given the many positive and negative feedback loops that would need to be examined.

The range of green job profiles thus defined is broad. It stretches from highly skilled research and development or management functions through technical and skilled levels to relatively low-skilled roles. In developed economies, environment related jobs tend to be concentrated in sectors/activities directly linked to decarbonizing energy supply and improving energy efficiency, pollution control and eco-friendly services. Examples of those sectors that hold the promise of the green jobs of the future include:

- Delivering improvements in energy and resource efficiency, particularly in the building sector (new and existing built stock), but also industry and transport;
- Renewable energy (including bio-fuels and renewable technologies);
- Sustainable mobility (i.e. mass transportation);
- Waste management and recycling of raw materials;
- Eco-industries related to pollution control (air, water, waste, site decontamination, noise); and "eco-friendly" services (conservation, ecotourism, etc.).

In developing economies other sectors may be at least as important, in particular:

- Those involving the sustainable use of natural resources, including agriculture, forestry and fisheries; and
- Activities relating to adaptation to climate change.

b) *Social Dimension of Green Jobs (the "Decent Work" Criterion)*

The green job definition used here encompasses more than just the extent to which a particular job contributes to a more environmentally sustainable economy. It also captures a measure of job quality. Effectively, a job may be associated with an economic activity that is more environmentally sustainable than the norm or which contributes to such improvement in other sectors, but it cannot be considered a "green job" if it does not meet conditions of decent work.

The decent work definition is built upon a set of social and labor rights and obligations. The eight basic conventions of the ILO, which are recognized as defining the various aspects of socially responsible production, also apply to green jobs.11 Indicators and criteria have been developed and endorsed at the international level through adoption of the ILO labor standards which are relevant to the further characterization of the social and labor dimension of green jobs (see box 1). Many jobs would not be considered decent. This is due to a number of factors. The so-called "green sectors" in developing countries include sectors where achieving decent work conditions remain a challenge. Examples of "green but not decent jobs" include low-wage jobs installing solar panels, and jobs in ship breaking or electronic waste recycling where occupational safety is inadequate or child labor is used. In many instances, these sectors are defined by their informal nature, hardship and occupational and health hazards.

**Box 1: the ILO definition of Decent Work**

Decent work has been defined by ILO representatives of governments and employers' and workers' organizations in over 180 countries as: "opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity, in which women and men have access on equal terms". Decent work combines adequate income from productive work with social security, respect for worker and social rights and the opportunity to voice and defend interests collectively.

*Decent work is relative and country-specific because countries differ socially and economically. None can aim for the same absolute conditions of work. Each country must set its own targets for decent work.*

The following integrated agenda of policies and measures across four mutually reinforcing areas is required to achieve decent work goals:

1. Respect for and protection of basic human rights at work
2. Promotion and creation of opportunities for full productive and remunerative employment
3. Broad social protection
4. Sustained social dialogue among social partners: workers, employers and private business, and government.

A universal social "floor" applies to all countries, and includes respect for the following basic human rights:

- Freedom of association and the effective recognition of collective bargaining rights
- Elimination of all forms of forced or compulsory labour
- Effective abolition of child labour and the right of children to learn and develop rather than work
- Elimination of discrimination in respect of employment and occupation.

Gaps between people's decent work aspirations and reality exist everywhere. The challenge is to reduce these gaps. Progress towards decent work should be the central goal of all economic and social policies and strategies.

## III. The Environmental Agenda and Green Jobs in Developing Countries

International debate on global environmental issues has evolved over the last two decades since the adoption of the 1992 Rio Conventions on desertification, climate change and biodiversity. 36 more favorable conditions are being created for the development of an enlarged “environmental economy”, and the emergence of new economic sectors and services. In response, demand for jobs with new qualifications and skills has increased and other jobs have evolved. The green jobs concept highlights labour market shifts that are directly dependent on various aspects of environmental management and low carbon development, as well as climate change adaptation in accordance with the definition given by the United Nations Framework Convention on Climate Change (UNFCCC).

A growing literature suggests that millions of green jobs already exist. The economic restructuring due to green growth will lead to changes in prices, in international trade and in the output of countries, and therefore in employment. These effects have been the subject of a number of studies seeking to quantify the net employment effects. Results show that net effects on jobs are modest but the economic structural shift can be quite substantial. Essentially, the number and nature of jobs will change as the relative importance of sectors changes, with some expanding, others contracting, and others remaining stable but with changes in processes and products. But this transition has been documented mostly in industrialized countries.

Research on developing countries is comparatively scarce. Alongside the growing need to assess the contribution of these sectors and activities to national economies, methodologies and analytical tools that integrate the complex interactions between the socio-economic and environmental fields are also required. Indeed, there is demand for a comprehensive analytical framework that can better assist policy-making in this fast-evolving field, including in developing countries.

Green growth can create new and additional employment demand. This is the case, for example, when jobs in renewable energy replace those depending on fossil fuels, or when new jobs are created by expenditure on adaptation activities.

In developing countries, which tend to have unutilized or underutilized labour, this provides opportunities to raise total employment.

## IV. Country Level Support of the Green Jobs Programme

The number of countries the Green Jobs Programme is actively collaborating with increased over the past years and the areas of work cover a great variety of issues. The map below displays the current and expected country level support of the Green Jobs Programme.

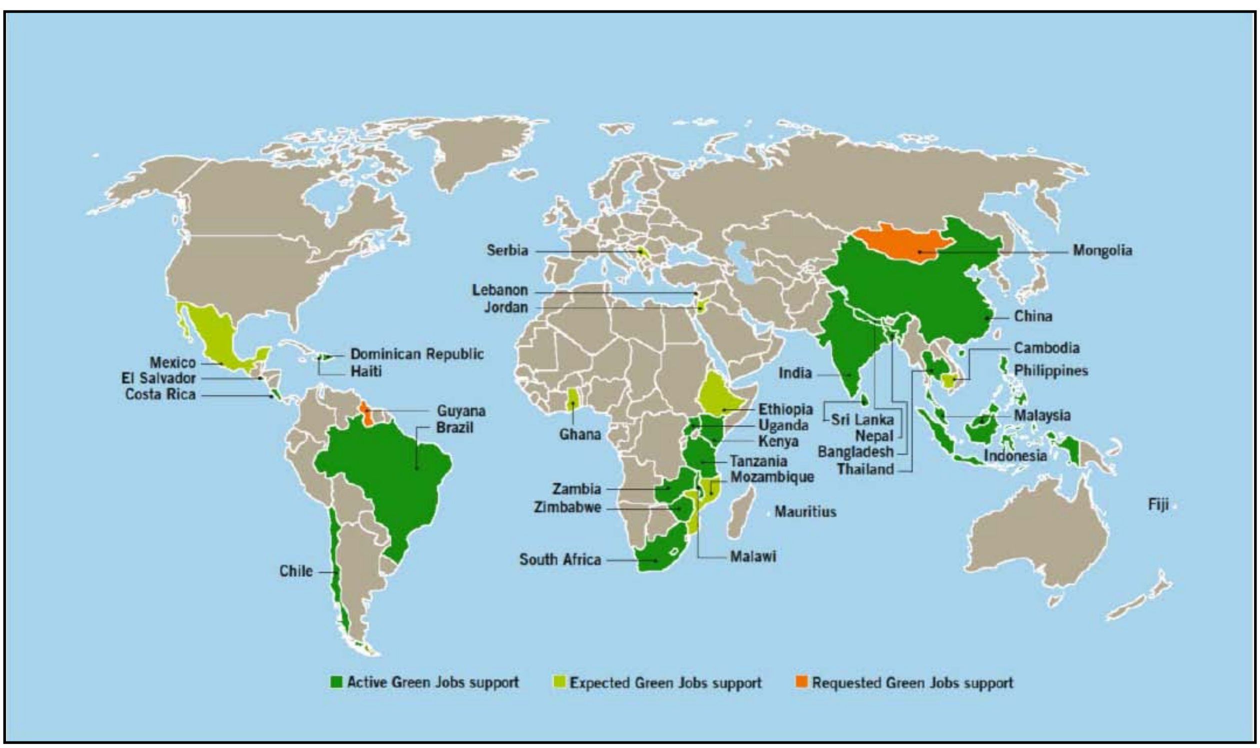


*Figure 1 :* Current and expected country level support of the Green Jobs Programme

The Programme contributes to the establishment of green jobs and greener economies, among others, in the following sectors: construction and green buildings, tourism, renewable energy and energy efficiency, forestry, natural resource management, recycling and waste management and sustainable agriculture. It supports national initiatives through advocacy workshop and capacity building, assessments on green jobs potential, policy advice and strategic planning. It also supports local initiatives by promoting green entrepreneurship, the greening of enterprises and local development for adaptation to climate change.

The regional activities in Africa focus mainly on strengthening green entrepreneurship. In South Africa several studies and projects focus on the building and construction sector. The Asia and the Pacific Green Jobs Programme encourages ILO constituents to participate in social dialogue on green jobs through capacity building, promotes inclusive jobs centred and environmentally sustainable growth models and advocates for green jobs creation through demonstration projects. In 2010, two projects were initiated by the regional Programme, the Green Jobs in Asia project funded by the Australian government and the Green Business Asia funded by the Japanese government. Green Jobs Programme activities in the Arab States are at the initial stages. In Lebanon, an assessment on the green jobs potential was conducted and a Green Jobs Kick-Off Workshop was held in Beirut from 28 to 29 July. In Latin America and the Caribbean, the main focus is on waste management, renewable energy, tourism, forestry, sustainable agriculture and green social housing. Haiti receives support in the area of adaptation to climate change.

## V. Green Jobs Initiatives and Implementation in Bangladesh

Bangladesh is a low energy-consuming though energy starved country. About 60% of the population is not connected to the national grid. A large majority of the 40% that do have access to the national grid live in urban areas. Although Bangladesh has made impressive gains in key human development indicators, more than 63 million people remain below the poverty line. Under employment is pervasive, unemployment levels high amongst the youth, and the informal economy estimated to account for 88% of the overall employment. The Gender Empowerment Measure ranking of 76 shows continued low levels of female ownership of economic assets.

In July 2008, a national workshop on Green Jobs Initiatives (jointly organized by Ministry of Labour and Employment, Bangladesh and ILO) was held in Dhaka to raise awareness of the concept of Green Jobs and recommend steps forward. Participants at the workshop expressed support for Bangladesh as a participating country on ILO Green Jobs initiatives, noting that as a first step, there was a need to undertake an inventory of existing green jobs. A formal launching of the green jobs initiative was held on 04 December 2008, in which it was agreed, among others, that:

- A draft action plan on green jobs would be formulated following a series of regional level consultations;
- An inventory on green jobs on "who is doing what" needs to be carried out which would support the draft action plan, and other policy interventions.

As a follow up to the initiatives mentioned above, the ILO, in consultation with the Ministry of Labour and Employment has launched two assessment studies in selected sectors: one assessment would focus on three sectors viz. waste management, renewable energy and construction; the other study would focus on agriculture sector including forestry. The agriculture sector assessment on green jobs would include both an inventory and assessment of the intensive green technologies which are currently on going or are being planned in the future and those have an impact on poverty reduction, employment creation, sustainable environment and decent work.

Since 2008, the Green Jobs Programme has implemented activities in Bangladesh (first phase: 2008 to 2010). Various awareness raising activities on green jobs took place at national and regional levels. They helped to improve the effective implementation and enforcement of green jobs in the country. Baseline knowledge on green jobs was generated through a national assessment and complemented by sector based analysis and by a separate study on skills needs for green jobs.

Training in renewable energy (i.e. solar home systems) and soft skills (i.e. entrepreneurship capacity development) were provided to equip the project target groups (mostly women in rural areas) with adequate techniques and skills for employment opportunities. The training was provided through a Public Private Partnership (PPP) with Grameen Shakti (a non-profit company) and the Bureau for Manpower Employment and Training (BMET). The promotion of green jobs in Bangladesh provides employment opportunities through training on solar techniques and facilitates a low-carbon development by promoting renewable energy.

The lessons learned from the first phase have been successfully integrated into the Green Jobs in Asia project, under the ILO – Australian Partnership (2010 – 2015). The Private-Public Partnership will be expanded to cover a larger market scope, not only including Grameen Shakti, BMET but also the Infrastructure Development Company Limited (IDCOL).

## VI. Potential Sectors for Green Jobs in Bangladesh

Table 1 showing the potential sectors for green jobs in Bangladesh.

*Table 1 :* Potential sectors for green jobs in Bangladesh
Sector Scope/Field of Green Jobs

| Sector | Scope/Field of Green Jobs |
|---|---|
| Agriculture | • Soil conservation<br>• Water efficiency in Irrigation<br>• Organic farming ( tea cultivation already started in Bangladesh)<br>• Reducing distance between farm and market |
| Forestry | • Reforestation and afforestation<br>• Sustainable forestry management by community<br>• Halting of deforestation |
| Energy | • Renewable Energy ( solar, biogas, improved stove, biomass)<br>• Manufacturing of energy efficient appliances such as CFL, efficient air conditions etc. |
| Transport | • Fuel switching in vehicles ( petrol, diesel to CNG)<br>• Use of hybrid or fuel efficient vehicles<br>• Mass transit<br>• Bus rapid transit (BRT)- modal shift,<br>• Car Pooling |
| Construction | • Cement factory ( energy efficiency)<br>• Brick Manufacturing ( energy efficiency)<br>• Concrete Blocks<br>• Green Building/Energy efficient Buildings |
| Manufacturing | • Pollution control technologies such as ETP<br>• Energy and materials efficiency |
| Waste Management | • Recycling of municipal organic and inorganic waste (composting, biogas, biogas to energy, RDF etc, plastic waste recycling)<br>• Recycling of lead acid battery<br>• Extended producer responsibility (product take back and remanufacturing) |

## VII. Sector Wise Distribution of Green Jobs in Bangladesh

There were two study conducted on number of green employments held in different sectors of Bangladesh which showing in Table 2 and Table 3.

*Table 2 :* Sector wise distribution of green jobs estimated by Waste Concern, 2009

| Sector | Green Jobs (Numbers) |
|---|---|
| Agriculture and Forestry | 8725 |
| Transportation | 147987 |
| Manufacturing ( energy Efficiency, Brick Kilns) | 11,081 |
| Renewable Energy | 14966 |
| Waste Recycling ( compost, production, sales and distribution) | 29942 |
| Building Construction | 536,000 |
| **Total** | **748,701** |

*Table 3 :* Sector wise distribution of green jobs estimated by GHK Consultants for ILO, 2010

| Sector | Core Environment Related Jobs | Green Jobs |
|---|---|---|
| Sustainable agriculture | 41,548 | Not possible to estimate |
| Sustainable and participatory forestry | 28,813 | Not possible to estimate |

| | | |
|---|---|---|
| Sustainable energy | 18,823 | 18,823 |
| Waste management and recycling | 189,180 | Not possible to estimate |
| Collection purification and distribution of water | 8,441 | Not possible to estimate |
| Climate adaptation activities | 1,726,755 | Not possible to estimate |
| Manufacturing and energy efficiency | 10,934 | 10,934 |
| Sustainable transportation | 178,510 | 178,510 |
| Sustainable construction | 1,340,000 | 536,000 – 670,000 |
| **Total** | **3,543,004** | **811,268** |

## VIII. Constraints and Challenges of Green Jobs in Bangladesh

It is true the green jobs sector is growing in Bangladesh, but there are also challenges that need to be overcome to accelerate growth. The burning constraints and challenges of green jobs in Bangladesh perspectives are following

- Lack of awareness and capacity building to understand the concept of Green Jobs
- Insufficient incentives & promotional measures.
- Inadequate research and development initiatives; and
- Insufficient Public Private Partnerships.

## IX. Suggestion towards Promoting Green Jobs in Bangladesh

### *a) Basic Principles for the Promotion of Green Employment*

Green employment directly leads to increases in productivity and efficiency, helps to promote faster income growth for workers and increases the amounts of income distributed across workers. The promotion of various environmental protection measures lead to an ever-expanding green industry chain with numerous direct and indirect employment opportunities which have the potential to offset the numbers of jobs lost in conventional industries. The newly created jobs would be safer, more economical and stable. Policies in human resources, therefore, have no option but to follow the trend of green development and effectively promote green employment.

*i. Promotion of Green Employment through Classification*

Different kinds of ideas and principles must be used to promote different types of green jobs, as they cannot be generalized nor standardized. For green jobs born out of demand, the government should follow market mechanisms, eliminating factors which might obstruct the proper functioning of the market and try to provide more and better employment services. For the government directed type of green jobs, policy interference needs to occur to design specific employment promotion policies.

*ii. Industrial/ Sectoral, Environmental and Employment Policies are Equally Important and should be Considered Concurrently*

Economic development, environmental protection and employment promotion are all bring about improvements to people's lives, all three equally important. The economy cannot be developed by ignoring the environment or employment, nor could the environment be well protected by limiting economic growth and job creation or a development model be created without employment growth be adopted.

Policy should provide leverage for integrated support, coordinating the promotion of industrial/ sectoral structure optimization, the environment's continuous improvement, job increases and improvement to job quality. All these mean that, under the premise that employment goals are given full consideration, we should encourage industries/sectors in the environmental sector to promote the transformation of traditional industries towards more sustainable production and gradually improve environmental standards.

The key to realizing the coordinated development of the three dimensions outlined above is to have synchronized policy making, i.e. when deciding on industrial/sectoral policy and planning, there should be simultaneous drafting of employment policies and plans; when drafting employment policies and plans, the effects on economic development and the environment must be taken into account.

*iii. Policies that Promote Green Employment Require Further Scrutiny of the Concept of Green Employment*

Further scrutiny of the green job concept is required before green policy is promoted because: some green jobs do not offer decent employment; some green jobs are good for the environment but do not promote low carbon employment, some low carbon jobs are work against environmental protection, such as the growing of biomass energy crops using of fertilizer that generates pollution; some green jobs do not meet the need for industrial development, such as photovoltaic power plants and PV power generation equipment manufacturing where over capacity is pervasive; some green jobs do not meet the characteristics of resource endowments.

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Therefore, green job development should not solely involve promotion without policy constraint and control. When the government is drafting green employment promotion policies, it must take into account Bangladesh's unique position and identify the areas and levels of intervention for green employment.

iv. *Industry-Specific Green Job Promotion Policies*

Green jobs exist in all different industries, sectors and levels and impact all kinds of workers, varying widely across different industries. Therefore, under the general guiding ideology and principles, industry/sector-specific survey and research must be conducted, and industry/sector specific green employment promotion policies must be devised.

v. *Policy Suggestions for the Promotion of Green Employment*

Setting green employment promotion policies is the greening of a more active employment policy system. On the one hand the "green" concept must be implanted into the policy system. Accelerating economic growth and expanding employment are still the government's most urgent tasks. In this scenario, the green employment promotion must give proper consideration to the following issues: firstly, green employment promotion should not cause great employment fluctuation, with respective employment plans well designed. Secondly, when it is difficult to fully transfer surplus agricultural labour to meet job demand, the government should support the greening of labour intensive employment in the agricultural. Thirdly, like other policies, green job promotion should focus on non-public sectors, including individual, privately-owned, and village and township enterprises etc. On one hand, these enterprises generate the majority of jobs, and on the other hand, the greening potential is quite considerable. Fourthly, flexible employment is still the key channel for job creation and green employment promotion must not strangle this employment channel.

In accordance with the research findings, the following policy suggestions are made:

vi. *Ensure Green Employment is Developed through Legal Channels*

- *Conduct an Employment Evaluation of Industrial/Sectoral and Environmental Policies*

First of all, employment must be the centre of a social evaluation index system set up for environmental protection.

In industrial and environmental planning, employment evaluation indexes must use scientific methods, including the number of new jobs a project could possibly create, the number of lost jobs brought about by the project's existence, the impact on the local human resource supply-demand position, the impact on local income levels and the identification of potential human resources for the project, etc.

Secondly, designing of employment evaluation indexes should be followed by employment planning. This means the design of policies and measures to address the project's impacts on employment. If job losses are likely, plans must be made to counteract unemployment; if there are additional human resource needs, a supply plan must be devised. At the crux of such planning is the provision of adequate financial resources to address the project impacts.

Thirdly, employment evaluation indexes and plans should be accompanied by employment budgeting, i.e. the cost benefit t of the project on employment including accounting for the cost of employment and funding.

Lastly, project evaluation should be conducted. The impacts on employment of evaluation of the industrial and environmental policies should a pre-condition for project approval.

- *Modify and Improve Relevant Laws and Industrial and Environmental Policy*

Firstly, clear goals for green employment must be raised during the process of drafting any plan or policy. Ultimately, targets for employment and environmental protection must be clearly stated so to ensure the development of green employment in Bangladesh for future. Secondly respective laws and regulations should be modified.

vii. *Policy Measures for Promoting Green Employment*

- *Green HR Market Mechanisms to Promote Green Employment*

A green employment certification system should be set up to promote green employment. Companies or organizations in green industries and green companies in non-green industries could be acknowledged with the title of 'Green Employer', a reference for receiving related policy support. For example, Green Employers could qualify to join suppliers on the government's green procurement list.

A professional green job certification system could be set up to promote workers' transformation towards "green collar" jobs. Improvements to the professional certification system, setting up standards for green jobs and encouraging workers to take part in certification will help to get more people to join the ranks of green employment.

The third point concerns the public employment service system. A green job service zone should be set up in public employment service agencies, in order to collect and advertise green job information and promote matching between demand and supply for green jobs. The labour and social security community platform should be used so that green job information can reach every worker.

viii. *The Greening of Existing Employment Policy to Promote Green Employment*

Jobs in those industries which were affected for institutional reasons and due to the State's industrial policies and as such they should be provided with support on employment policies, including those that promote job stabilization and employment.

The first is to encourage companies to expand employment. Policy leverages such as tax benefits, social insurance subsidies, guaranteed loans and interest subsidies should be used to encourage employment of those affected in the transformation towards green economy. Policy supports such as tax benefits should be provided to those companies that use multiple channels to relocate their own affected workers by the use of their existing facilities, sites and technology for diversification.

The second is to help companies overcome difficulties to create as many jobs as possible. Preferential treatments such as delaying payment of social insurances, reducing social insurance rates, and providing social insurance subsidies, job subsidies, and worker training subsidies, should be given to those companies who are in the transformation towards green production and have the potential to absorb surplus workers, so that they could maintain stable employment, and eliminate or minimize redundancy.

The third is to encourage self-employed entrepreneurs. Entrepreneurship should be encouraged by providing free training, set tax relief and loan credit. Administrative fees and taxes could be reduced or waived for those starting their own businesses such as in small industry and privately owned businesses.

The fourth is to promote reemployment through public employment services and reemployment training. The government's public employment agencies should provide free employment services to people looking to be reemployed. Employees from the sunset industries should be retrained with a focus on the industries that are transforming their resource use, making it easier for those out of work to be reemployed in industries where there is growing demand.

The fifth is to provide employment support for those in financial difficulties. The government could create volunteer or charitable positions which have social security subsidies and job subsidies, which are open to those who are experiencing difficulty in finding reemployment. The government could provide social security subsidies to those who are expected to find reemployment relatively easily and coordinate placements for those that are finding it difficult to become reemployed.

ix. *Develop Green Job through Policy Support*

Some green jobs very competitive and will develop strongly without additional policy support. Environmental equipment, cleansing products and organic food are examples of such industries. However, generally speaking, green employment is an emerging phenomenon which still needs to rely on the quick set up of supportive policy. This does not necessarily refer to big investment but offers enormous potential for employment.

For example, some cities piloted waste collection and recycling stations which could not compete with private recycling operators. To build their size, jobs in waste recycling were created in communities to build up a network, using subsidies or social welfare subsidies in the early phases of growth. When green employment develops into a formal industry, it will be able to operate free from government intervention.

x. *Develop Green Employment in the Process of Rural Development and Building the West*

There is broad potential for green employment in rural areas. Agriculture is the foundation of the Bangladesh economy. Building the ecological environment is the basis of Bangladesh national policy and the rural economy is a miniature national economy.

The first is in developing employment in eco-agriculture. Eco-agriculture combines labour with green knowledge to produce energy saving green food.

The second is in developing employment in specialized agriculture. Specialized agriculture based on market and regional advantages will be the develop-pment direction for modern agriculture. This would lead to the creation of groups of specialized households and villages, also helping to increase farmers' incomes. The third is developing employment in processing the products of specialized agriculture. This processing combines agriculture, industry and commerce, lead by an enterprise or farmer's cooperative linking farmers and the processing industry in an operational chain. The fourth is developing rural eco-tourism, which could achieve significant growth in production, revenue and employment. The fifth is developing new energy industries. Energy consumption in rural areas is undergoing a fast increase. The development of biomass energy, straw manure biogas etc, not only helps to meet countryside energy demand, but also are important areas for green employment. The sixth is to drive up demand for rural public services and create green public service positions on the basis of developing the rural economy.

xi. *Drive Employment Growth by Supporting the Development of Green Jobs in Small Business*

Small business has always played a key role in creating and absorbing employment and this is also true for green employment. Green Employer Certificates should be given out to small enterprises classified as green-jobs employers so that businesses can enjoy preferential policies. Founders of new small green businesses should be provided with micro loans; have their industrial and commercial registrations simplified. A policy to support the promotion of green technology should be made to drive the implementation and popularization of green scientific research results, and to promote green collar entrepreneurship.

xii. *Develop A Green Skills Development Plan for the Promotion of Green Employment*

Skills development is the key in the transformation towards green employment. All existing training should be greened, such as practical skills training in agriculture and skills training for transforming rural employment. Green skills should be incorporated into all these training programs. A new skills development plan should also be drawn up.

xiii. *Plan for Technical and Technological Enhancement for Green Industry*

This refers to drawing up and implementing a plan for the technical and technological enhancement of China's green industry, improving workers' overall green skills levels and supplying the necessary human resources for green development.

To achieve this, industry-specific outlines for green technology and skills and human resource planning must be drawn up. For new technologies and skills, industries and universities can work together to establish the most suitable training methods.

- *Greening Existing Corporate Training*

Greening of existing corporate training includes topics such as green entrepreneurial philosophies, green industrial skills and green entrepreneurship etc.

- *Developing Green Job Qualifications and Skills Appraisals*

Green-collar assessment and evaluation should be developed according to green job standards so to gradually develop green job practitioner qualifications and green skills appraisals.

- *Setting up A Green Skill Development System for all Workers*

As green jobs exist in every industry and involve all kinds of workers, green skills development should extend to all workers. All kinds of channels such as vocational schools, community training centers, public sector employment agencies and companies should be used to spread the concept of green employment and green skills so that the next generation of workers are aware of green jobs; to provide green return-to-work training for the unemployed; offer up-skilling and re-training for workers in struggling companies; provide green vocational skills training for migrant workers; provide free green vocational training for demobilized soldiers; provide green entrepreneurial training for university graduates and those wanting to start their own businesses; and hold green vocational training as part of skills development for existing workers. Policies offering subsidized training could be used to encourage the scope of training. Extensions to the duration of training courses as well as improvements to training focus and effectiveness could also be made.

xiv. *Working with Social Partners to Promote Green Employment*

Mutual understanding must be reached between the government, employers and workers. Employers must take on the social responsibility for green development, aligning green employment with economic benefits.

xv. *Improving Publicity and Creating an Atmosphere for the Development of Green Employment*

Different methods can be employed to promote an atmosphere where green employment is well understood, respected and developed. Awareness raising can be achieved through increasing publicity for green employment and important green projects and events, as well as road shows, activities to collect suggestions from workers, releasing news of innovative or energy efficient practices, hosting environmental knowledge contests and issuing awards to selected groups and individuals in recognition of their contribution to green employment.

xvi. *Improving the Environment for Promoting Green Development*

- *Improving Environmental Standards*

Development of the environmental standards system (industries either lacking standards or with standards partially complete) must be sped up and able to be met by the majority of businesses. The government should give thorough consideration to the position of the country when setting up the standards: firstly allowing companies to comply step by step and secondly, using funding or policy support to make it feasible for companies to implement the standards. Full consideration must be giving to the impact on society and in particular, the impact on employment when implementing environmental standards.

- *Incentives and Punitive Measures to Encourage the Sustainable Development of Enterprise*

Refusing to fulfill environmental responsibilities equates to externalizing responsibilities for the environmental and social costs of doing business. Firstly, promoting a company's transformation towards green development requires incentives, putting green technology and its users in an advantageous market position such as increasing government subsidies on environmental products and services that will not or do not yet generate financial returns. Secondly, law enforcement must be improved. Some enterprises are generally able to follow national environmental policies, while some small private enterprises aren't able to strictly follow the national standards. Rectification of environmental practices and environmental law enforcement should be strengthened for those enterprises.

- *Improving the Finance Mechanisms for Green Development*

The development, utilization and popularization of environmental technologies are critical in promoting transformation toward a green economy, and the key for the adapting environmental technology is funding. Financing facilities must be continuously improved, including the imposition of resource, environment and carbon taxes etc, to generate funding for green economic development and green job creation. International support in terms of technology and funding should also be sought.

## X. Conclusion

The prospects and potential of green jobs in the country are huge. There are many potential sectors such as renewable energy, buildings and construction, transportation, basic industries, agriculture and forestry will be the priority areas for the future green job market. According to an ILO study, around 2.8 million people are currently involved in green or environmental jobs. The global environmental job market is projected to be doubled every year from $1,370 billion at present to $2,740 billion by 2020. More than two million people have, in recent years, found new jobs in the renewable energy sector, and the potential for job growth is huge. Being a new concept in Bangladesh, green jobs need not only be defined in our country's context but it also needs to identify the areas and sectors where green jobs can be promoted and the specific measures to be adopted. In this perspective, it is high time for Bangladesh to explore the alternative areas of cooperation in creating job opportunities.

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# Political, Economic, and Social Transformations in Post-Soviet Belarus, 1990-2012: A Research Brief and Overview

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*Abstract -* With the economic collapse of the former Soviet Union, Belarus was faced with new political and economic realities. In the two decades since, these new realities have also impacted other aspects on Belarusian's day-to-day lives, including their societal values and attitudes. Utilizing primary data collected from in-depth interviews, focus groups, and participant observation, along with secondary data analysis of multiple waves of the World Values Survey, this research brief and overview proposes a research agenda to examine and explore the political, economic, and social transformations in post-Soviet Belarus from 1990-2012 and these impacts on societal and work values and attitudes.

*GJMBR-B Classification : JEL Code: P16, Z13*

POLITICALECONOMICANDSOCIALTRANSFORMATIONSINPOST-SOVIETBELARUS1990-2012ARESEARCHBRIEFANDOVERVIEW

*Strictly as per the compliance and regulations of:*

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## I. Introduction to Research Scope and Objectives

With the collapse of the former Soviet Union, Belarus was faced with new political and economic realities. In the two decades since, these new realities have also impacted other aspects on Belarusian's day-to-day lives, including their societal values and attitudes. Additionally, it has been argued that the economic collapse of the former Soviet Union and the transformation of political and economic systems in post-Soviet Belarus resulted in a decline in the material circumstances of households, reduced social integration and social cohesion, and a decline in the ability of people to take control over their own lives (Muradyan 2011; Abbott and Wallace 2010). Furthermore, previous research has shown that labor management practices in Belarus are more negative for workers than those under the Soviet system (Danilovich and Croucher, 2011).

Building upon these and other studies, this research will utilize:(1) the results of in-depth interviews with key government, industry, and higher education stakeholders, (2) the results of multiple industry employee and higher education student focus groups, (3) participant observation, and (4) descriptive attitudinal data from multiple waves of the World Values Survey to examine and explore the political and economic structural country contextual factors impacting the labor transformation in the country, with a focus on changing societal and work attitudes and values in post-Soviet Belarus from 1990-2012[1].

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## II. Brief Overview to Belarus Political, Economic, and Labor Management Transformations

Many scholars have pointed to the extensive disrupting economic and social changes that followed the collapse of communism in the USSR in 1991 (e.g., Burawoy 2001; Sztompka 2002; Abbott and Wallace 2009; Shevchenko 2009). Furthermore, Rotman and Veremeeva (2011) examined these impacts among post-Soviet countries and argue that "Belarus's location in the geographical heart of Europe places the country in a strategically important position between Russia and the European Union (EU)" (p. 73). Despite its central geographic location and cultural and political history and current economic ties with its neighbors, to this point Belarus has largely been an understudied country, particularly within the context of the shifting political and economic landscape following the Soviet collapse.

Abbott and Wallace (2010) examined the economic collapse of the former Soviet Union on the lives of Belarusian citizens and found that a majority of the population have a poor quality of life and good reason to be dissatisfied with their lives. More specifically, they found that the collapse has not only resulted in a decline in economic security of households but also on social integration, social cohesion and the ability of people to take control over their own lives, leaving many unable to develop capabilities in order to adequately function. They state, "The economic transition from planned market economies was accompanied by economic crisis exemplified in declining GDP, hyperinflation and cuts in state welfare spending. The social impact of transition can be seen in the increase in inequalities, rising poverty, unemploy-ment, and violent crime, a decline in trust, a decline in well-being and demodernisation with the majority of the population being 'losers'" (2010, p. 653-654; see also Danilovich 2010).

However, it was not merely the collapse of the Soviet Union that resulted in these difficulties for

[1] In-depth interviews, focus group sessions, and all participant observation were conducted between April and August, 2012 as part of a Fulbright Scholar Fellowship. The host institution was Belarusian State University, with heavy collaboration with the Belarus High Tech Park.

Belarusian citizens. Koktysh (2005) pointed out, "The overnight disintegration of the Soviet identity in August 1991, combined with the failure of the nationalization project…, left society in a somewhat complicated position. Like the rest of the post-Soviet space, Belorussia had no 'framework' ideology, no national idea that could integrate society" (p. 86), thus leaving it in an untenable position culturally, politically, and economically. Within the context of this political and economic "vacuum" and the shifting political landscape, Abbott (2007) added, "that lived experience-how people evaluate their condition-is as significant an influence on their welfare as the actual circumstances in which they live" (p. 219) and found that most Belarusians perceive the post-1991 economic and political changes negatively, and that levels of general satisfaction and happiness are comparatively low in relation to other post-Soviet countries.

The emerging political "populous revolution" and Lukashenka's authoritarian orientation towards a "social market economy" had impacts on labor management practices in the country as well (see Karbalevich, 2001). Danilovich and Croucher (2011) have explored the changing nature of human resource practices within the country following the Soviet collapse and the Lukashenka rise to power and found that "Labour management practices at enterprise level in Belarus are more negative for workers than those under the Soviet system. Welfare has largely disappeared, as has Soviet-style informal bargaining; wage payment may be in kind; training is minimal; job insecurity is extreme and trade unions perform a corporatist role" (2011, p. 241). Additionally, Sokolova and Ermakov (2005) examined the changing nature of human capital in Belarus in and found that Belarus has seen significant declines in each of three spheres of human capital (science, education, and health care), putting the future competitive nature of the labor force and growth in the economy in question. Finally, Muradyan (2011) specifically examined work values and work ethos in Belarus and found that the values of self-realization, personal responsibility, and initiative are still not a firm part of the Belarusian labor consciousness, while materialistic needs dominate the perceived needs of employees.

## III. Example Comparison of Attitudes in Belarus to other Countries Around the Globe

Below are a few interesting key areas of attitudinal comparison in looking at how Belarus "stacks up" within a comparative global context:

- Out of 81 countries around the globe (global mean is 6.51), only the 7 countries have a lower mean life satisfaction score than Belarus (4.8): Tanzania (3.9), Zimbabwe (3.9), Armenia (4.3), Moldova (4.6), Ukraine (4.6), Russia (4.7), and Georgia (4.7). Note that general life satisfaction in Belarus is very close to the mean scores of several of its post-Soviet neighbors.
- Out of 80 countries around the globe (global mean is 6.74), only the following 4 countries have a lower mean "freedom of choice and control" score than Belarus (5.6): Pakistan (4.7), Turkey (5.3), Ukraine (5.4), and Egypt (5.5). As with general life satisfaction, "freedom of choice and control" in Belarus is very close to the mean scores of several of its post-Soviet neighbors.
- Out of 33 countries around the globe (global mean is 7.14), Belarus (5.5) has the lowest mean job satisfaction score. The next closet countries are the Ukraine (5.9), Turkey (6.1), and Russia (6.2), followed by a significant jump in mean scores before you reach the next tier of countries.
- Out of 33 countries around the globe (global mean is 6.34), only 2 countries have a lower mean "freedom of making decision in taking a job" score than Belarus (5.1): Turkey (4.5) and Lithuania (4.9).
- Out of 15 countries around the globe (global mean is 6.59), Belarus (5.5) has one of the lowest mean "satisfaction with job security" score, trailed only by Lithuania (4.6), the Ukraine (5.2), and Turkey (5.3).

One can easily see that Belarus is at or near the rear for each of these 5 key variables (and many more I have not listed here), significantly below worldwide averages for each. Additionally, within the post-Soviet/Eastern European geopolitical/cultural context, attitudes in Belarus appear to be fairly similar to several of its post-Soviet neighbors. The question to be answered is what are the reasons for these comparative differences and similarities and what do they mean for the future of Belarus and its neighbors?

## IV. Conclusion and Future Research

Preliminary research demonstrates that there have been substantial shifts in societal and work conditions, attitudes and values as Belarus experienced the transition from being a part of the Soviet Union, to post-Soviet political and economic adaptation and the eventual adoption of its own government. Almost overnight, Belarus was faced with new political and economic realities, which in turn impacted labor and work realities. In the more than two decades since, these new realities have impacted other aspects on Belarusian's day-to-day lives, including their work values and attitudes. Future research needs to further explore the political, economic, and labor transformation in post-Soviet Belarus, particularly as they relate to shifting conditions, values and attitudes. Additionally, future research should explore how Belarus compares to other countries with regard to various political, economic, and social conditions and attitudinal indicators and seek for explanations of the causes of these differences and of what they may mean for the future of the country and its interactions with its neighbors.

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# A Cointegration and Causality Analysis for Assessing Sustainability and Security in Indian Energy Sector

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*Abstract -* The purpose of the paper is to establish the long run relationship between gross domestic product (GDP) and energy consumption in India. This is known that energy plays a vital role for all the economies and the relationship relates to levels and changes in economic development approximated by GDP. Literatures also reveal that the greater is region's GDP, the greater is the energy consumption. The data of three decades (1981-2011) has been taken for analysis and results are analyzed in the software package Stata/SE10.0. The time series analysis is used to develop conceptual framework, which includes testing of stationary using unit root test, Granger causality, cointegration and error correction mechanism (ECM). On applying cointegration, it is found that two variables are co-integrated of order one (I~ (1)).

*Keywords : gross domestic product (GDP), energy consumption, stationary, unit root test, granger causality, cointegration, error correction mechanism (ECM), stata/se/10.0, India.*

*GJMBR-B Classification : JEL Code: O13, P28*

ACOINTEGRATIONANDCAUSALITYANALYSISFORASSESSINGSUSTAINABILITYANDSECURITYININDIANENERGYSECTOR

*Strictly as per the compliance and regulations of:*

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Vivek Soni [α], Surya Prakash Singh [σ] & Devinder Kumar Banwet [ρ]

*Abstract -* The purpose of the paper is to establish the long run relationship between gross domestic product (GDP) and energy consumption in India. This is known that energy plays a vital role for all the economies and the relationship relates to levels and changes in economic development approximated by GDP. Literatures also reveal that the greater is region's GDP, the greater is the energy consumption. The data of three decades (1981-2011) has been taken for analysis and results are analyzed in the software package Stata/SE10.0. The time series analysis is used to develop conceptual framework, which includes testing of stationary using unit root test, Granger causality, cointegration and error correction mechanism (ECM). On applying cointegration, it is found that two variables are co-integrated of order one (*I*~ (1)). The Granger test results confirmed the existence of unidirectional causality running from electricity consumption to economic growth. The same has been verified by ECM approach and a long-run relationship has been developed. This implies that over time higher electricity consumption in India give rise to more economic growth. The proposed framework and results draw a rough road map with much accurate estimations for national policy strengthening in the future to assess the sustainability in Indian energy sector.

*Keywords : gross domestic product (GDP), energy consumption, stationary, unit root test, granger causality, cointegration, error correction mechanism (ECM), stata/se/10.0, India.*

## I. Introduction

Energy plays vital role in development of long-range policies to help guide the future of a local, national, regional or even the global energy system. Country like India is the fourth largest consumer of energy in the world after USA, China and Russia. It is not endow with copious energy resources. It must, therefore meet its development needs by using all available domestic resources. This may includes the supplementing domestic production by imports also. The import of energy is costly affairs given the prevailing energy prices, which are not likely to liberal, and thus impinges adversely on nations' energy security. Therefore meeting the energy needs by achieving set and targeted economic growth reflects one side of coin, while meeting energy requirements of the population at affordable prices on another side of the coin, presents a major faces. In this context it is necessary to have glimpse up of linkages that how energy consumption of related to economic growth. Thus lying down the reasons and logical framework for energy security indicator like energy consumption and related issues with the economic growth, is significant research contribution in the mainstream of the energy sector in particular.

It is, therefore important to establish the relationship between consumption and national output and also their direction of causality to get a better understanding of the issues involved and determine the policy strategies. That is why in this study the main purpose is made to examine the causal relationships between electricity consumption, economic growth using three-decade time series data spanning from 1981 to 2011. This paper flows in six parts and has numbered accordingly. The part one of this study is the introductory part. The rest of the study is organized into another five parts. The second part of the study will present contextual information of the study where it discussed regarding current and future situation of Indian power sector. Part three is the literature review section, where it presents relevant literatures that will gives the sound conception of the fact. This section also draws the gaps in the literature review, the nature and sources of data used for this study. The part four provides a path regarding research methodological approach and the relevant key statistics on the time series data sets used, while part five is discussed the empirical results. Finally, part six will provide the conclusion and limitations that will point out the possible policy recommendations of the study.

## II. Contextual Information of the Study

### a) *Recent Issues Related to Energy Security*

Energy security involves ensuring uninterrupted supply of energy to support the economic and commercial activities necessary for sustained economic

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growth. Thus, it is obviously more difficult to ensure if there is large dependence on imported energy. This discusses the several areas. First one and most importantly, the domestic production from resources like coal, oil and gas and others, are to used and increased for own use. Recent issues involve E and finds in this regard, have been primarily the availability of land, clearances for environment and forest for compliance of international negotiations. Second issue is that, there has to be a stable and attractive policy regime, which provide and ensure substantial private investment including foreign investment in oil and natural gas blocks and new capacities for renewable energy. Further, to add in this section, the producers must have clarity in the price they will receive and an assurance of a stable tax regime. Since then, oil exploration is a global industry the terms India offers must be comparable with those offered elsewhere. In this context the entire structure of country's New Exploration Licensing Policy (NELP) contracts for oil and gas need to be look again. Third, investments in renewable energies need to be monitor and be strongly emphasised. Referring to the present projections by the international organizations, the share of renewable energy in total energy consumption will only reach 2% by 2021. Fourth, investments in energy assets in foreign countries, especially for coal, oil and gas and uranium should be enhanced. Fifth, to meet any possible disruption in oil supplies, on which country is import-dependent to the extent of more than 80 per cent, storage capacities need to be created. As per, Organisation for Economic Cooperation and Development (OECD), countries has generally created these capacities to the extent of 90 days of their domestic demand. While in India, it has created the capacity for 5 million tonnes. It has, however, not been fully utilised so far. There will be a need to increase this gradually and utilise it fully. Innovation in required to fill up these gaps *(Sources: Twelfth five year Plan 2012-17, Planning Commission, Govt. of India).*

*b) Economic Growth: A Human Development Perspective*

The world has been noticed the continuous growth in the developing countries including in India, especially when developed economies stopped growing during the 2008–2009 financial crises. As per the United Nations Human Development Report 2013 released recently titled on rise of the southern economics of the world, within the developing world has given as an overdue global rebalancing. This discussion has typically focused narrowly on economic growth and trade growth in a few economies. As this Report also commented and reflected, the rise of the South is both the result of continual human development investments and achievements and an opportunity for still greater human progress for the world as a whole. Making that progress a reality will require informed and enlightened global and national policymaking, drawing on the policy lessons analyzed *(Sources: United Nations Human Development Report, 2013).*

*c) Gross Domestic Product as an Indicator of Economic Growth*

Gross domestic product (GDP), is defined as the value of all officially recognized final goods and services produced within a country in a given period. GDP per is capita often considered as an indicator of a country's standard of living, GDP per capita is not a measure of personal income. Under economic theory, GDP per capita exactly equals the gross domestic income (GDI) per capita. In general, GDP is related to national accounts, a subject in macroeconomics. The term is different from gross national product (GNP) which allocates production based on ownership. It was first developed by Simon Kuznets for a US Congress report in 1934. In his report, Kuznets warned against its use as a measure of welfare. After the Bretton Woods conference in 1944, it became the main tool for measuring a country's economy.

*d) Energy Intensity of GDP and Expanding Access to Energy*

Energy intensity, defined as the energy input associated with a unit of GDP, is a measure of the energy efficiency of a nation's economy. As per the United Nation's Human Development Report, 2013, India's energy intensity has been declining over the years and it is expected to decline further. Falling energy intensity implies that the growth in energy used is less than the growth of GDP, which in turn implies that energy elasticity, that is, the ratio of the growth of energy to the growth of GDP is less than unity. In reality, this elasticity has been declining over the years. Total primary energy GDP elasticity was around 0.73 during the period 1980–81 to 2000– 01 and it declined to 0.66 in the period 1981–81 to 2010–11 *(Sources: Twelfth five-year plan 2012-17 document, Planning Commission, Govt. of India).*

Higher levels of GDP will obviously require higher levels of energy as an input but in addition to this requirement India's energy, planning must allow to expand access to clean energy at affordable prices for the bulk of the population. Various government funded schemes supports and found critical ways of its implementation for village electrification and connection of rural households to electric supply. On the same time, the supply of kerosene/liquefied petroleum gas (LPG) at affordable prices is equally important. There is ample evidence of unmet demand in rural areas indicating the need to expand access even as we expand total supply.

*e) Framework for Creating Linkages between Energy Consumption and GDP*

The assessment of the linkages between use of energy i.e. energy consumption (kWh/capita or kWh/year) and economic growth has been a subject of greater importance as energy is considered to be significant driving force of economic growth in all economies. In recent years, non-oil dependent countries and international associations are facing energy deficiency, as the oil producing economies are unable to meet up the world demand for oil. The reason behind for this is the supply constraint of energy could be attributed to the frequent geo-political tensions between the nations or may be natural physical supply constraints in the oil extracting which is most emerging from and prominent in Gulf region of the world. Further it seen from the various literature and reports of global importance that the increasing world energy demand for oil, leads to abrupt escalation in the oil prices worldwide and subsequently in developing countries like India. Therefore likewise shortage of oil, there is also shortage of electricity and other types of energies viz. importantly energy from natural gas from the aspect of clean environment. The shortage can significantly affect the consumption in household all together and production of goods and export in the economy. This linkage and impact of energy demand, fulfilling national deficit as whole for the economy, on the consumption, production and thus minimization of current account deficit is very much essential to control the inflation and GDP of the economy like India.

*f) Framework for Creating Linkages between Energy Consumption and GDP*

India's current account deficit was a surplus 2.3% of GDP in 2003–04. Since then it has gone into deficit, reaching 2.7% of GDP in 2010–11 and 4.2% in 2011–12. A large part of the increase in 2011–12 was due to imports of gold, which are not expected to be repeat. Even so, the current account deficit in the first year of the Twelfth Plan will be around 5%, which exceeds what has traditionally regarded as a sustainable level. The macroeconomic analysis in prescribes that policies must be calibrated to ensure that the current account deficit in future planning, averages around 2.9%. On current prospects, it is likely to be somewhat higher. The ability to finance this deficit through stable capital flows is therefore critical *(Sources: Twelfth five-year plan 2012-17, Govt. of India).*

As regard the relative consumption of various sources of energy as percent of the world total, India occupies the third place following China and Japan among the emerging Asian economies. This raises the question whether India's energy consumption levels commensurate with levels of economic growth similar to other high as well as low energy consuming economies of the Asian region. In this context, this paper attempts to explore the possible long-run impact of energy consumption on economic growth, which has not been examined so far using three decades of data at once. The prime motivation of the study relates to addressing the puzzle of the increasing levels of energy consumption to induce economic growth in the event of the increasing cost associated with it as well as apprehensions regarding its sustained supply in future. Therefore, the study undertakes an empirical analysis, towards verifying this nexus of energy consumption and economic growth and suggesting policies that strikes a balance between consumption and conservation of energy in sustaining and speeding up the growth momentum of the economy.

## III. Review of Related Study

*a) Literature Review*

Given the importance of establishments for long run relationship and causality running between time series variables, many studies has been carried out in both developed and developed countries. The Table 1 laid downs the details of authors who have conducted the studies in various part of the world. (Refer Table1 on next page).

*b) Gaps Identified in the Literature Reviewed*

It is to be noted that the previous studies tried to relate the energy consumption with economic growth in India, but not established the long- run relationship. The cumulative data for long duration has not ever analyzed. In this context, the first issue related to importance of present research work, is the specific changes in the economic growth during the last decade 2001 to 2011. The decade has seen the global recession in the economy and there by up downs in energy sector with variations in national GDP figures. Thus it is important to assessing the long run or short run relationship between the energy consumption in such a circumstances. Which may give warning in futures for policy framework and such type of analysis gives the new imperatives to the sector. This will help to have policy strategies for assessment of energy security with inclusive economic growth. In such a scenario, the application traditional time series cointegration technique is seems to be viable. The next section discusses the data sources, and methodological framework.

*c) The Nature and Source of Data for Analysis*

The type of data used becomes important specifically the empirical analysis of time series. A time series is set of observations on the values that a variable takes at different times. Such data may be collected at regular time intervals, such as daily, weekly, monthly, quarterly, annually, quinquennially that is for every 5 years or decennially that is, every 10 years. Some data available both quarterly as well as annually as in case of economic development indicator like GDP. The time series data used for heavily in econometric studies and present a social problem. The success of any econometric analysis - ultimately depends on the

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availability of the appropriate data. It is therefore essential to discuss about the nature, sources, and limitations of the data that one may encounter in empirical analysis. This paper considers the annual data of last three decades 1981-2011 for energy consumption and GDP. The source of these data is Ministry of Power, Govt. of India, Planning Commission, National Sample Survey Organization (NSSO), Central Statistical Organization (CSO) India and Ministry of Statistics and Programme Implementation Govt. of India.

*Table 1 :* Overview of the related literature

| Year | Author name | Country | Variables used for identifying relationship | Identifying research issues |
|---|---|---|---|---|
| 1978 | Kraft and Kraft | United States | Total energy consumption and income | Unidirectional causality |
| 1985 | Yu and Choi | | | No causal relationship |
| 1989 | Abosedra and Baghestani | | | Unidirectional causality |
| 1995 | Cheng | United States | Total energy consumption and income | No causal relationship |
| 1996 | Masih and Masih | Asian economies | Total energy consumption and real income | Neutral w. r. t. income for some countries |
| 1998 | Yan | Hong Kong | Residential electricity consumption models using climatic variables | Examine the relationship |
| 2002 | Ogulata | Turkey | Industrial energy consumption and primary energy demand | Major component is electricity consumption |
| 2003 | Soytas and Sari | G7 | Energy consumption and GDP | Causality: GDP to energy consumption |
| 2004 | Ediger | Turkey | Energy and economy | Close relationship exists between energy and economy |
| 2004 | Sari & Soytas | Turkey | GDP and energy consumption | Total energy consumption explained around 21 percentage of forecast error variance of GDP |
| 2005 | Ghosh | India | Total petroleum products consumption and economic growth | Long-run equilibrium relationship |
| 2006 | Lee | Major industrialized countries | Energy consumption and income | Neutral to each other in countries like UK, Germany, and Sweden |
| 2010 | Atanasiu and Bertoldi | EU-27 | Electricity consumption for energy efficient equipments | Examine the relationship , the energy efficiency progress and electricity-saving potential |

*Table 2 :* Statistics of time series variables

| Statistics description | ECt (Energy Consumption) Billion kWh | *GDPt (Gross Domestic Product) Rs. Cr. |
|---|---|---|
| No. of observations | 32 | 32 |
| Mean | 2922.588 | 1981433 |
| Minimum | 1012.58 | 695361 |
| Maximum | 7558.47 | 5202514 |
| Std. Dev. | 1655.64 | 1262409 |

* From 2008-09 GDPt estimates are with 2004-05 base year, while figure for the year 2011-12 is provisional. Sources: Reserve Bank of India, Ministry of Power and Ministry of Statistics and Programme Implementation Govt. of India.

## III. Research Methodlogy

In order to investigate the relationship between energy consumption and GDP in India, a two-step standard time series econometric model procedure has adopted.

*a) Step-1*

In Step-I, time series properties of data investigated by use of unit root test and long-run relationship investigated by use of cointegration analysis.

i. *Step 1 (a): Testing Stationarity*

To carry out stationary analysis, unit root test is used. Dickey and Fuller approach was applied using following model. To minimize autocorrelation in the error term, the lagged difference terms are used. The null hypothesis in each case is $H_0$: $\delta=0$. It means there is a unit root. Failing to reject the null hypothesis implies that the series contain the unit root hence non –stationary at levels. The ADF test is performed on logGDPt and logECt time series.

$$\Delta Y_t = a_0 + a_1 t + \delta Y_{t-1} + \Sigma\, i\alpha\, \Delta Y_{t-1} + u_t \qquad (1)$$

ii. *Step 1(b) : Test for Cointegration*

The test for cointegration is applied using the Engle-Granger two-step procedure (Granger, 1986 and Engle and Granger, 1987). The procedure includes the testing whether the regression residuals of the following long –run regression were stationary:

$$logGDPt = a_0 + a_1\, logECt + u_1 \qquad (2)$$

$$logECt = a_0 + a_1\, logGDPt + u_2 \qquad (3)$$

Where $u_1$, $u_2$ are error terms assumed uncorrelated with zero mean and constant variance. The above two equations were estimated using ordinary least square (OLS) method. The term a1 is elasticity of GDP with respect to energy consumption in equation (3). Some time it is called as consumption elasticity. Supposing that ut is subject to unit root analysis and find that it is stationary; that is, it is $I\sim$ (0). This is an interesting situation, for although logECt and logGDPt, is individually $I\sim$ *(1)*, that is, they have stochastic trends, their linear combination is $I\sim$ (0). So to speak, the linear combination cancels out the stochastic trends in the two series. In this case, we say that the two variables are co-integrated. Economically speaking, two variables are cointegrated, if they have a long-term, or equilibrium, relationship between them. In short, provided it can be checked that the residuals from regressions are $I\sim$ (0) or stationary. The traditional regression methodology is F-test that have considered extensively is applicable to data involving (nonstationary) time series.

*b) Step-2*

The Step-II follows the investigation of casual relationship between energy consumption and GDP of India. If the variables were non-stationary at levels and linear combination of them is non-stationary, the Granger causality test is used. Further, if the series were non-stationary and there is long-run relationship between the variables, then Error Correction Mechanism (ECM) is used (Yang, 2000).

i. *Step 2 (a) : Granger Causality Test*

The standard Granger causality analysis is done before ECM. This was investigated by using the following two-regression model of Eq. (4) and Eq. (5).

$$logGDP_t = \sum_{i=1}^{n} a_i \log(GDP)_{t-i} + \sum_{j=1}^{n} \beta_j \log(EC)_{t-i} + u_{1t}$$

$$logEC_t = \sum_{i=1}^{m} b_i \log(EC)_{t-i} + \sum_{j=1}^{m} \alpha_j \log(GDP)_{t-i} + u_{2t}$$

Where $u_{1t}$, $u_{2t}$ are error terms assumed to have zero means and uncorrelated, n and m are lag lengths. The null hypotheses are that $logEC_t$ does not Granger cause $logGDP_t$ in the regression (4) and that is $logGDP_t$ does not Granger cause $logEC_t$ in regression (5). This was done by using F-test for the joint significance of the parameters $\alpha_i$ and $\beta_j$.

ii. *Step 2 (b): Error Correction Mechanism*

The error correction mechanism (ECM) first used by Sargan and later popularized by Engle and Granger corrects for disequilibrium. Thus, an ECM is a theoretically driven approach useful for estimating both short term and long-term effects of one time series on another. The approach is employed because many time series appear to be 'first-difference stationary,' with their levels exhibiting unit root or non-stationary behavior. Conventional regression estimators, including Vector Auto regression (VAR), have good properties when applied to covariance-stationary time series, but encounter difficulties when applied to non-stationary or integrated processes. These difficulties were illustrated by Granger and Newbold (J. Econometrics, 1974), when they introduced the concept of spurious regressions. Granger and Engle theoretically developed in their celebrated paper (Econometrica, 1987), raised the possibility that two or more integrated, non-stationary time series might be cointegrated, so that some linear combination of these series could be stationary even though each series is not. If two series are both integrated (of order one, or $I\sim$ *(1))*, it could model their interrelationship by taking first differences of each series and including the differences in a VAR or a structural model. However, this approach would be suboptimal if it was determined that these series are indeed cointegrated. In that case, the VAR would only express the short-run responses of these series to innovations in each series. This implies that the simple regression in first differences is misspecified. If the series are cointegrated, they move together in the long- run. A VAR in first differences, although properly specified in terms of covariance-stationary series, will not capture those long-run tendencies. Accordingly, the VAR concept maybe extended to the vector error-correction model (VECM), where there is evidence of cointegration among two or more series. The model fits to the first differences of the non-stationary variables, but a lagged error-correction term is added to the relationship. In the current study of two variable i.e. $\log GDP_t$ and $\log EC_t$, this term is the lagged residual from the cointegrating regression, of one of the series on the other in levels. It expresses the prior disequilibrium from the long-run relationship, in which that residual would be zero. When using the ECM method causality is tested by estimating the following regressions (6) and (7).

$$\Delta logGDP_t = u_0 + \sum_{i=1}^{n} \varphi_i \log(GDP)_{t-i} + \sum_{j=1}^{n} \theta_j \log(EC)_{t-i} + \pi \hat{u}_{t-1} + e_{1t} \tag{6}$$

$$\Delta logEC_t = u_1 + \sum_{i=1}^{m} b_i \log(EC)_{t-i} + \sum_{j=1}^{n} y_j \log(EC)_{t-i} + \rho \hat{u}_{t-2} + e_{2t} \tag{7}$$

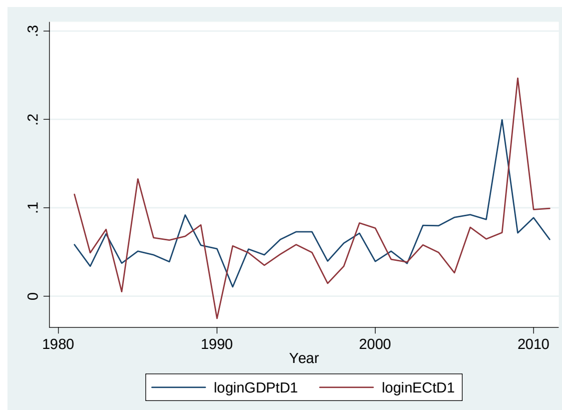
Where $\Delta$, is the first difference operator, while $\hat{u}_{t-1}$ and $\hat{u}_{t-2}$, are estimated residuals from equations (2) and (3), respectively. In this method $logEC_t$ Granger causes $logGDP_t$ if either the coefficients on lagged $logEC_t$ as statistically significance or the coefficient on lagged error term ($\pi$) is statistically significant. Similarly, the same is applicable vice-versa for the equations (7). The choice of lag length was determined by testing significance of the parameters used in the equations (6) and (7). All the data were, converted in to natural log before causality analysis.

## IV. Empirical Results

The data analyzed in software Stata/SE10.0. The empirical results includes analysis using graphs representations, tables outputs, have been laid down in five sub-sections. Sub-section (a), there is a preliminary analysis using graphs analysis. Sub-section (b), stationary test followed by cointegration results in sub-sections (c). The sub-section (d) presents the causality analysis. In later part of analysis i.e. sub-section (e), the VECM approach is discussed.

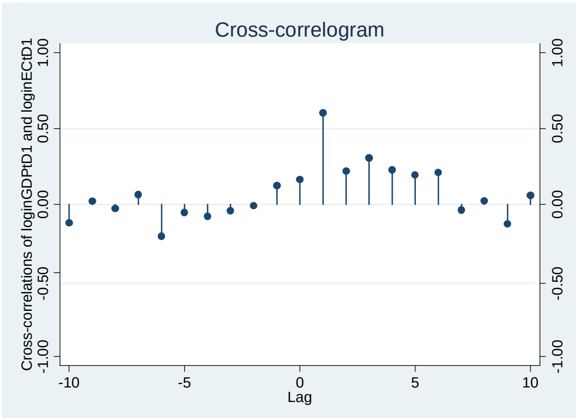
### *a) Preliminary Analysis and Lag Selection Criteria*

Before testing stationarity, the trends of time series variables have been analyzed and drawn in the form of the Graphs. The variables found increasing in levels trends. Therefore, first difference of them has reported here. The first difference trend seems to be cointegrated.




*Graph 1(a) :* Variables trends at first difference

To explore autocorrelation function (AFC), which is the correlation between a variable and its previous values, use the command corrgram. The time series theory and experience showing, the rule of thumb is to compute autocorrelation function (ACF) up to one-third (1/3) to one-quarter (1/4) the length of the time series. Apart from the best practical advice given by Akaike or Schwarz information criterion (AIC) or (SIC), ACF is analyzed using lag length of 10. Since the auto-correlations at various lags hover around zero, it resembles the correlogram of a white noise time series. This gives a correlogram of a stationary time series. Since the autocorrelation coefficients vanishing or diminishing in nature over the lags (1 to 12), this confirms the stationary of the variables $logGDP_t$ and $logEC_t$




*Graph 1(b) :* Cross- correlation between the variables at first difference

When running regressions on time-series data, it is often important to include lagged values of the dependent variable as independent variables. In technical terminology, the regression is called a vector autoregression (VAR). When trying to sort out the determinants of *$logGDP_t$*, it is likely that last year's *$logGDP_t$* is correlated with this year's *$logGDP_t$*, if this is the case, *$logGDP_t$* lagged for at least one year should be included on the right-hand side of the regression. If the variable is persistent that is, values in the far past are still affecting today's value's more lags will be necessary. In order to determine how many lags to use, several selection criteria may be used. Three commonly used are the Akaike's information criterion (AIC), the Hannan and Quinn information criterion (HQIC) and the Schwarz's Bayesian information criterion (SBIC). The default number of lags Stata checks is four (4). In order to check a different number, maxlags operator is used. Since data set is yearly for the period 1981 to 2011 and as seen from the many studies the maximum lag length of eight (10) is used for estimating optimal lag length. The maximum lag is (1/4) of the whole range of the data on time series variables.

*b) Stationary Test*

Alternative to section I (a), one can use the unit room test to carry out stationarity analysis. Dickey and Fuller approach was applied. To minimize auto-correlation in the error term, the lagged difference terms are used. The null hypothesis in each case is $H_0$: $\delta=0$. It means there is a unit root. Failing to reject the null hypothesis implies that the series contain the unit root hence non-stationary at levels. The ADF test is performed on *$logGDP_t$* and *$logEC_t$* time series.

*Table 3 :* Unit root rests for stationary

| Variable | Levels | Mackinnon p-values |
|---|---|---|
| $logGDP_t$ | 2.992 | 1.000 |
| $logEC_t$ | 1.140 | 0.995 |

| Variable | First Difference | Mackinnon p-values |
|---|---|---|
| $logGDP_t$ | -4.117 | 0.0009 |
| $logEC_t$ | -4.846 | 0.000 |

If considering constant, trend and drift term in the regression is not included, the null hypothesis of non-stationary of the two of two series at levels not rejected. The *$logEC_t$* and *$logGDP_t$* were stationary at first difference levels. Thus both time series are therefore, integrated of order one *I~ (1)*.

*c) Cointegration Test*

It has noticed that the regression of a nonstationary time series on another non-stationary time series may produce a spurious regression. On analysis, of *$loginEC_t$* and *$loginGDP_t$* time series individually to have stationarity, it has found that they both are containing a unit roots.

A number of methods for testing cointegration have been proposed in the literature. Out of few, the only two are comparatively simple methods. First one is the DF or ADF unit root test on the residuals estimated from the co-integrating regression and second one the co-integrating regression Durbin-Watson (CRDW) test. The first one used for this purpose of this study. Cointegration refers to the fact that two or more series share a stochastic trend (Stock & Watson). Engle and Granger (1987) suggested a two-step process to test for cointegration (an OLS regression and a unit root test), the EG-ADF test. The results for cointegration analysis are presented in the Table 4.

*Table 4 :* Cointegration Test

| Regression | Result (ADF table) | Mackinnon p-values | Optimal lag length as per AIC/HQIC/ SBIC |
|---|---|---|---|
| $logGDP_t$ on $logEC_t$ | -1.171 | 0.686 | 7 |
| $logEC_t$ on $logGDP_t$ | -1.447 | 0.5597 | 7 |

The lag length is determined by AIC was estimated seven (7) for both the regression equation. The results for both equations showed that the residuals of both equations found to be stationary providing evidence that GDP and energy consumption are Co-integrated or order *I~ (1)*.

*d) Granger Causality Test*

Table 5, presents the outputs from the standard Granger causality test between energy consumption and GDP. On regress, *'$logGDP_t$'* on lagged values of *'$logGDP_t$'* and *'$logEC_t$'* and the coefficients of the lag of

*'$logEC_t$'* are statistically significantly different from 0, then it can be said that *'$logEC_t$'* Granger-cause *'$logGDP_t$'*. Thus in this way, the time series data on '$logGDP_t$' can be used to predict the *'$logGDP_t$'* (Stock & Watson, 2007 and Green, 2008). Table 5, noted down the F-values of the regression analysis.

*Table 5 :* Granger causality test

| Regression | F-Value |
|---|---|
| $logGDP_t$ on $logEC_t$ | 0.17 |
| $logEC_t$ on $logGDP_t$ | 4.65 |

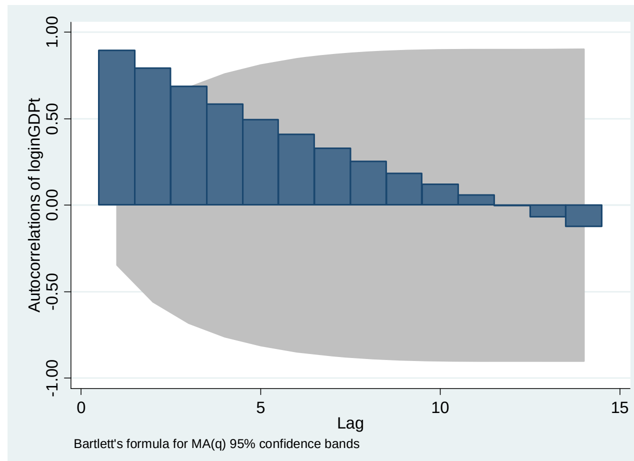
As shown from the table 5, only regression *$logEC_t$* on *$logGDP_t$* is statistically significant suggesting that there is unidirectional causality running from economic growth to energy consumption. It means, past values of *$logGDP_t$* in *$logEC_t$* equation, provides the good estimation of current values of *$logEC_t$*. In other terms, it can be said that economic growth causes energy consumption. The characterization that non-stationary variables may obey a long-run relationship with each other, whose residual is stationary, is the central perception of cointegration. ECM provides the formalization of this intuition.

*e) Estimation of Cointegrating Relationship and Vector Error Correction Model*

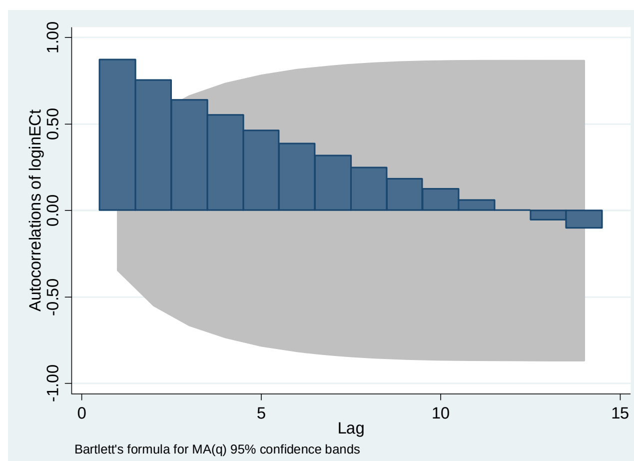
By using the EG or AEG test one can find that two time series are co-integrated, that is, there is a long-term, or equilibrium, relationship between the two. Of course, in the short run there may be disequilibrium. Therefore, one can treat the error term as the "equilibrium error." Further to say that, this error term used to tie the short-run behavior to its long-run value. Referring to the ECM equations (6), (7) and results from the causality test, the ECM approach found to be appropriate in testing the causality between energy consumption and GDP. For analyzing the causality, obtained the first difference operator for both the time series variables and estimate residuals the $\hat{u}_{t-1}$ and $\hat{u}_{t-2}$ from equations (2) and (3). In this method, *$logEC_t$* Granger causes *$logGDP_t$* if either the coefficients on lagged *$logEC_t$* as statistically significance or the coefficient on lagged error term ($\pi$) is statistically significant. Similarly, this is applicable for the equation (7). ECM modeling in Stata is based on the maximum likelihood framework of Johansen (J. Ec. Dyn. Ctrl., 1988). In that framework, deterministic trends can appear in the means of the differenced series, or in the mean of the Co-integrating relationship. The constant term in the VECM implies a linear trend in the levels of the variables. Thus, a time trend in the equation implies quadratic trends in the level data. Based on Johansen criteria for estimation of the VECM unrestricted constant specifications are used.

i. *Confirm the Unit Root*

The autocorrelations of the two variables displayed here. While these autocorrelations do not provide a formal test for unit root, they appear consistent with that hypothesis. The ACF falls off approximately linearly rather than exhibiting either exponential decay or sudden drop to zero value. The Dickey-Fuller test statistic using a generalized least squares (GLS), also provide more formal support for the hypothesis of a unit root in both the variables. The test statistics is not smaller than any of the critical values at any of the lags, so accept the null hypothesis of a unit root.




*Graph 2(a) :* ACF of *$logGDP_t$*




*Graph 2(b) :* ACF of *$logEC_t$*

ii. *Identify Number of Lags*

The varsoc command in Stata used to estimate the number of lags. It places an asterisk by the test statistics associated with the recommended lag length. The likelihood-ratio test suggests one lag.

```
varsoc loginGDPt loginECt

   Selection-order criteria
   Sample:  1984 - 2011                               Number of obs      =      28

  +---------------------------------------------------------------------------+
  |lag |    LL      LR      df    p      FPE       AIC       HQIC      SBIC    |
  |----+----------------------------------------------------------------------|
  |  0 |  22.1593                       .000812  -1.43995  -1.41086  -1.34479  |
  |  1 |  116.147  187.98*   4  0.000  1.3e-06* -7.86764* -7.78037* -7.58216*  |
  |  2 |  117.564  2.8349    4  0.586  1.6e-06  -7.68317  -7.53771  -7.20738   |
  |  3 |  118.486  1.8437    4  0.764  2.0e-06   -7.4633  -7.25967   -6.7972   |
  |  4 |  119.083  1.1932    4  0.879  2.6e-06   -7.2202  -6.95838  -6.36378   |
  +---------------------------------------------------------------------------+
   Endogenous:  loginGDPt loginECt
    Exogenous:  _cons
```

iii. *Identify the Number of Cointegrating Relationship*

The number of linearly independent cointegrating relationships, r, lies between, 0 and K-1. Where, K is the number of dependent variables in a time series. The vecrank command provides three different approaches that can help identify value of r. By default, Stata calculates and displays a trace statistics (Johansen, 1995). The other two approaches provided by vecrank are the maximum eigen value test and assortment information criteria. The later identify the value of r that minimizes the SBIC, HQIC and AIC criteria. The unrestricted constant specification has chosen by default.

With this specification, the null hypothesis that r $\leq$ 0 is accepted (trace statistics = 14.5876 with a 5% critical value of 15.41). Which seems little unfeasible. While other test statistics on maximum eigenvalue and information –criterion tests reported that maximum value of $r = 1$. Thus, it is concluded that there is one cointegrating vector.

iv. *Fitting VECM*

With the specifications of one lags, one cointegrating relationship and constant trend, the model was fitted. From the table of coefficients, in the $logGDP_t$ equation, the L1._ce1 term is the lagged error correction term. It corresponds to the speed of adjustment to nonzero values of cointegrating relationship. The short-run coefficients in this equation are not significantly different from zero. The final table on VEC from Stata output reports the estimated coefficients in the cointegrating equation. The relationship is estimated as:

$$logGDP_t - 1.033 logEC_t - 6.20 \quad (8)$$

The relationship equations suggest that it is in equilibrium, the index of construction $logGDP_t$ is 103% of the index in $logEC_t$.

v. *Test for Stability and White Noise Residuals*

On testing stability of the VECM, it is found that VECM specifications impose a unit root. Aside from the unit root, there is no evidence of instability. Nor is there evidence of auto-correlated errors. The null hypothesis is rejected for the Δ $logGDP_t$ equation by skewness test.

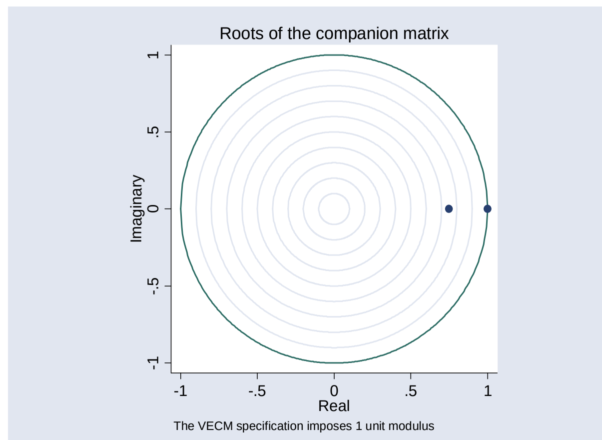
*Table 6 :* Eigenvalue stability condition

| Eigenvalue | Modulus |
|---|---|
| 1 | 1 |
| 0.7474953 | 0.7474953 |

Remarks : The VECM specification imposes a unit modulus.

*Table 7 :* Skweness test

| Equation | Skewness | Chi2 | df | Prob> Ch2 |
|---|---|---|---|---|
| D_*loginGDPt* | 1.8206 | 16.02 | 1 | 0.00006 |
| D_*loginECt* | 0.04009 | 0.008 | 1 | 0.92976 |
| ALL | | 16.028 | 2 | 0.00033 |




*Graph 3 :* The VECM specifications imposes unit modulus

The VECM specifications impose a unit root and single root is found (modulus<0), thus variables cointegration shows as best long run relationship exits.

## V. Conclusion and Further Implications

This paper aimed at investigating causality linkage between economic growth and GDP in India using secondary data over the period 1981-2011. According to Engle–Ganger cointegration methodology, there is a long-run relationship between energy consumption and GDP. The study used the error correction mechanism and compared the results with the standard Granger causality mythology of econometrics. Results show that economic growth causes total energy consumption in India. There was hardly any difference founds between the results from both the techniques. The result agreed with the other studies done in past (Hrushikesh Mallick). One reason for support causality is that India's Agriculture and allied sectors accounted for 15.7% of the GDP till end of 2010, employed roughly half of the total workforce, and despite a steady decline of its share in the GDP, is still the largest economic sector and a significant piece of the overall socio-economic development of the country. Second reason is that power is one of the key sectors driving India's infrastructure growth. Therefore, it is essential for the country's power sector to meet planned capacity additions and reduce power deficits to all time contribute to the country's GDP growth. The power sector in the country currently in the developing stage, and supports the growth of various other important sectors. To this effect, the sector need 100 per cent foreign direct investment through the automatic route, setting up of ultra mega power projects and encouraging joint ventures through the PPP route to step up private sector participation.

India is the fourth largest producer of electricity and oil products and the fourth largest importer of coal and crude oil in the world. Coal and oil together account for 66% of the energy consumption. It is less dependent on energy as an input in it's GDP output as compared to the developed countries and emerging economy like China. The results obtained in this study, has important implications on India's energy and economic growth policy. The country uses many type foreign exchanges to finance energy imports. The other policy implication is that increase economic growth in India, will lead to increase use of energy by keeping other factors constant. Therefore, planning renewable energy sub-sector phase wise and investing in it, seems to be much viable that has more advantages compared to fossil-based energy on environment protection background. In addition, given that there are some factors like coal potential, its import and petroleum potential with in the country, it will save lot of money spent on refining sector.

Therefore, it is concluded that results from this study draws a road map for the country to meet its growing needs of energy faces both energy constraints from the supply side and demand management policies. Hence securing the energy security related issues. The findings implications also suggests for adapting an energy growth policy in order to stimulate economic growth rate in the country.

On the limitations grounds, much of the same post-estimation apparatus as developed for VARs for VECMs may be used. Impulse response functions orthogonalized IRFs, FEVDs etc., maybe constructed for VECMs. The VECM has the capability to compute dynamic forecasts, due to limitations of the scope of work; the present study do not includes the forecasting. These are the relevant issues for the future research, which needs to be addressed for a rational national energy policy in the country.

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# A Primer on Franchising in the United States: A Vehicle for Economic Mobility?

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*Abstract -* Part I of this two-part study introduces the concept of franchising, outlines its unique elements, delineates the categories or types of franchises and lines of businesses involved in franchising, describes the benefits of franchising in the U.S. economy, provides a guide to the various types of fees associated with the franchise relationship, and discusses the issues surrounding performance measurement and master franchising. In Part II, the authors will discuss the important legal aspects of franchising centering on the franchise contract, important Federal Trade Commission required disclosures associated with the Franchise Disclosure Document (FDD), and aspects of antitrust law applicable to the franchise relationship.

*Keywords : franchising; quality control; distributorship; "business format franchise"; master franchise; franchise fees; benchmarking.*

*GJMBR-B Classification : JEL Code: J60, O10*

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*Strictly as per the compliance and regulations of:*

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Richard J. Hunter, Jr. [α] & Héctor R. Lozada [σ]

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## I. Overview

There are an estimated 3,000 different franchise businesses, commonly called *franchises*, operating in the United States, with approximately 746,828 franchise businesses across 300 business categories. Franchising is said to provide 8,100,000 million Americans with direct employment, and nearly 18 million total jobs in franchise-related operations. Franchising generates $769 billion of output and $454 billion towards the United States GDP (or 4.6% of total GDP). The International Franchise Association estimates that franchising involves 40% of all retail sales and that nearly 4% of all small businesses in the United States are franchises. (A-Z Franchises.com, 2013).

## II. What Exactly is Franchising?

From the legal point of view, there is no *one* universally accepted definition of a franchise. The following definition is found in the text of the State of Washington *Franchise Investment Protection Act:*

"*Franchise* means an oral or written contract or agreement, either expressed or implied, in which a person (the franchisor) grants to another person (the franchisee) a license to use a trade name, service mark, trade mark, logotype or related characteristic in which there is a community of interest in the business offering, selling, distributing goods or services at wholesale or retail, leasing or otherwise and in which the franchisee is required to pay, directly or indirectly, a franchise fee." (Revised Code of Washington (RCW), Chapter 19.100, 2013.)

A second definition is found in the relevant Illinois statute:

"*Franchise* means a contract or agreement, either expressed or implied, whether oral or written, between two or more persons by which: (a) a franchise is granted the right to engage in the business of offering, selling or distributing goods or services, under a marketing plan or system prescribed in substantial part by a franchisor; and (b) the operation of the franchisee's business pursuant to such plan or system is substantially associated with the franchisor's trademark, service mark, trade name, logo-type, advertising, or other commercial symbol designating the franchisor or its affiliate; and (c) the person granted the right to engage in such business is required to pay a fee of $500 or more." (Illinois Franchise Disclosure Act of 1987, 2013.)

## III. Setting up the Franchise Relationship

Franchisors usually recruit potential franchisees by advertising their particular businesses either in the general media or in specialized "trade publications." Additionally, in the United States, there is an annual *"Franchise Expo,"* where all of the major franchisors are represented and where interested individuals can speak face-to-face to franchisor representatives. [See Appendix I.] The franchisor then will send detailed "franchise information kits" to those who answer the advertisements. Typically, this franchise kit points out the great potential for success in this particular industry. It may offer either a single-location franchise or, in some cases, a "master franchise." Thus, from the outset, the prospective franchise relies heavily on the franchisor for guidance, support, and critical "business information," such as market studies, profit projections, location analysis, leasing information, and information relating to procurement of supplies and equipment for the individual franchise location.

Although there are many individual variables, the details of the arrangement usually follow a set pattern. Once the parties have decided to enter into a franchise relationship, the parties will sign a detailed

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*franchise agreement.* (Slawson, 1971; Burke, 2003). In the franchise agreement, the franchisor will grant the franchisee the right to use the trade mark or the service mark or distribute the standardized product (in a distributorship) in exchange for the payment of an initial franchise fee. The franchisor will often use its real estate expertise (or the services of a designated third party) to determine a specific franchise location, to design or arrange for the standardized construction of the facility, and to install standardized fixtures and equipment on the premises (such as signs, menu boards, logos, lighting, décor, etc.). The franchisor may lease these premises itself to franchisees or may sell such an operation to the franchisee as a "turn-key" operation. (Principe v. McDonald's Corp., 1980).

The franchisor will intensively advertise the product (sometimes on a national basis) in exchange for an advertising fee, usually calculated on the basis of a percentage of the gross sales, on average 3-7%. (Franchise fees will be discussed in greater detail, below.) In addition, the franchisor, in fulfillment of its legal obligation under the *Lanham Act* (1946) to maintain "*quality control*," will create a training program (the most famous may be McDonald's "*Hamburger U*"), prepare training manuals, and will set out stringent guidelines in such areas as the hiring of personnel, a company's uniform requirements or dress code, procurement of supplies, and cleanliness and employee grooming standards for the day-to-day operations of the business.[1]

Among other requirements, "the Lanham Act places an affirmative duty upon a licensor of a registered trademark to take reasonable measures to detect and prevent misleading uses of his mark by his licensees or suffer cancellation of his federal registration." (Dawn Donut Co. v. Hart Food Stores, Inc., 1959. p. 366.) This duty "derives from the Lanham Act's abandonment provisions, which specify that a registrant's mark may be canceled if the registrant fails to control its licensees' use of the licensed mark." (Dawn Donut Co. v. Hart Food Stores, Inc., 1959, p. 366, citing Mini Maid Servs. Co. v. Maid Brigade Sys., Inc., 1992, p. 1519.) As a result, in order to avoid non-compliance with the *Lanham Act,* a licensor of a trademark has a legal obligation to maintain adequate control over the use of its mark. (Gilson, 2013.) In this regard, Professor Gilson (2013, Section 6.04) notes: "Control over the nature and quality of the licensee's goods or services is the touchstone of a valid trademark license."

Once the franchise becomes operational, the franchisee must follow the procedures set out in the franchisor's *confidential operating manual* or risk the termination of the franchise. The *operating manual* usually requires strict accounting procedures (the franchisor will sometimes provide this necessary service, again at a fee), and authorizes the franchisor to inspect the franchisee's books and records. The franchisee will pay a set royalty (usually based on a percentage of gross sales, on average 5-8%) on a monthly or semi-monthly basis. The franchise agreement will usually obligate the franchisee to secure liability insurance to protect the franchisee and franchisor from casualty losses or law suits—although it would be rare for a franchisor to be held liable for the tortuous or improper conduct of a franchisee under the theory of *respondeat superior* because the franchisee is generally considered to be an independent contractor. (Cano v. DPNY, Inc., 2012; Haller & Weisbord, 2013.)

Only by maintaining *uniform standards of quality and appearance* can the franchisor preserve its unique reputation and foster the public's perception and acceptance of its product—often generically termed "good will." (E.g., State Department of Transportation v. Cowan, 2004; Scott, 2003.) In *Cowan*, the court noted: "While different jurisdictions vary slightly in their definitions of goodwill, the term generally is used to describe that component of value attributed to a business's reputation in the community, loyal customer base and ability to attract new customers." (State Department of Transportation v. Cowan, 2004, p. 5, citing Rohan & Reskin, 2004, § 29.01[1].) In *Dugan v. Dugan* (1983, p. 3), the Supreme Court of New Jersey stated that "goodwill is essentially reputation that will probably generate future business." David Logan Scott (2003, p. 170) stated that "A business may build goodwill over time as loyalty builds among its customer base."

Professor Emerson (2013, p. 375) cites certain specific topical concerns as they relate to the ownership of the good will associated with franchising: "termination, nonrenewal, trademark infringement, non-compete covenants, antitrust tying, vicarious liability, taxes, and equitable estoppel. In each area, one can find inconsistent approaches with regard to who owns the goodwill, franchisor or franchisee."

For this reason (and also for important economic reasons) franchisors will typically attempt to obligate a franchise to procure products and supplies from them at set prices (the legality of this practice, termed a "tie-in," will be discussed at length in Part II of our study) or will attempt to "designate" suppliers who

[1] Typically, franchisor control is almost 100 percent. For example, a McDonald's franchise agreement reads:
"The McDonald's System is a comprehensive restaurant system for the retailing of a limited menu of uniform and quality food products, emphasizing prompt and courteous service in a clean, wholesome atmosphere.... The foundation of the McDonald's System and the essence of this License is adherence by Licensee to standards and policies of Licensor providing for the uniform operation of all McDonald's restaurants... including, but not limited to, serving only designated food and beverage products; the use of only prescribed equipment and building layout and designs; strict adherence to designated food and beverage specifications and to Licensor's prescribed standards of Quality, Service, and Cleanliness...." (Husain v. McDonald's Corp., 2012, p. 869.)

can meet the franchisor's specifications and standards.[2] Critics of franchising have argued that these practices, and others which permit the franchisor to "suggest" resale prices (Biggers, Mann & Roberts, 1999), may mean that franchisees will pay inflated prices for supplies or services either to the franchisor or related parties.

The *termination provisions* of the franchising agreement will often constitute "legal traps for the unwary!" (Lederman & Steinberg, 2012.) The franchise agreement will usually set out the duration of the franchise, and will contain provisions for renewals after the initial time period. (Emerson, 2008.) The franchisee will usually be required to agree to a "*covenant not to compete*" which may severely restrict its ability to continue in the same or similar line of work for a set time after the termination of the franchise. (Klarfeld & VanderBroek, 2011; Emerson, 1995.)[3] Also considered are the conditions of default, such as the franchisee's insolvency or the failure to pay the monthly or semi-monthly franchise fee when due. In these and other circumstances, the agreement will usually provide that the franchisor must give the franchisee a "reasonable time" (usually ten days) to "*cure*" any instances of default. Most agreements provide for a notice of termination, and several state laws have set out a "good faith" or similar standard for termination, or have a required "notice period" of up to ninety days before the franchisor can effect a final termination. (Sanders, 1981; Lederman & Steinberg, 2012; Emerson, 2013.)[4]

## IV. Parties to the Relationship

The person or business entity that grants a franchise to another is called the franchisor or franchiser. [For this paper, the authors will use the term *franchisor*.] The person receiving the franchise is known as the franchisee. Franchises may be involved in retail businesses and may involve the sales of products or services to consumers. In the late 1990s, the "profile" of a typical franchisee in the United States would have revealed the following:

- 42% of all franchises are sold to husband-wife teams;
- 35.2% of franchisees have "significant" corporate experience (5-8 years);
- 49.7% have "some college," and 38.1% have a bachelor's degree;
- The average franchisee had a median income of $66,617 prior to becoming a franchisee, and a "net worth" of $329,704 (including the value of any home);
- The average age of a franchisee is 40 years old; the percent sold to women is roughly 11%; and
- The percent of minorities is 5%. (See, e.g., Fibre new.com (Website), 2013).

Interestingly, the 7-Eleven franchise has put forth several questions that they deem relevant in determining if an individual "fits the profile" of a potentially successful franchisee:

"These basic qualifications are only half the story. When considering if 7-Eleven is the right choice, candidates should consider if they possess the traits most common to successful 7-Eleven franchisees: Can you manage multiple tasks simultaneously and adapt to market and company changes? Can you hire, train and supervise employees? Are you willing to empower them and delegate responsibilities to them? Are you dedicated to operations excellence? Do you focus on the details? Are you committed to creating and managing an organization that effectively recruits, trains, retains and motivates people? Do you have a strong desire to build incremental income through execution and the ability to implement company programs and strategies? Do you have food service management or retail experience? Can you deliver an exceptional customer experience while maintaining a commitment to the core values of 7-Eleven? Do you support and understand your local community? Do you have strong ties to your community?" (7-Eleven.com (Website), 2013.)

## V. Categories of Franchising

### *a) Franchises Fall into two General Categories*

*A distributorship,* which is also termed a *product or trade name franchise,* is a franchise relationship in which a manufacturer/franchisor licenses a franchisee to sell its product either exclusively or in combination with other products. The franchisee is often given the "exclusive right" to sell the product in a

[2] Among the issues raised in determining whether a practice is legal or is illegal as an impermissible tie-in are (1) whether there are one or two products involved in the arrangement, i.e., are the trademark and a product sold at the franchise one or two products; (2) whether the franchisor has coerced its franchisees to take the tied product; (3) whether the franchisor has the requisite economic power in the tying product market; and, (4) the application of defenses. (Schlotzsky's, Ltd v. Sterling Purchasing and National Distribution Co., Inc, 2008; McCarthy, 1970.)

[3] *See also* Casey's Gen. Stores, Inc. v. Campbell Oil Co., 441 N.W.2d 758, 761 (Iowa 1989), which found that "[n] on competition agreements between a franchisor and a franchisee are designed not only to protect the interests of the immediate parties but also to protect other franchisees against competitive activities. Thus, to the extent that such non-competition agreements are exacted from all franchisees, each franchisee is thereby protected from competition from other franchisees." This is certainly a *different view* of the purposes of these covenants, rather than the standard one of the protection of the franchisor's business interests.

[4] The Virginia Automobile Dealers Association (2013) has compiled the "Top Ten" reason for termination. They include: lack of capitalization; loss of floorplan; bankruptcy; apathy; lack of effort; conviction of a crime; loss of license; fraud; change of control (ownership) without consent; and breach of a supplemental agreement such as a "promise to build a new facility, to relocate, to meet certain sales requirements, or for other purposes."

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designated area or territory, or in a "primary area of responsibility." (Klein, 1995; Lockerby, 1986; Gumick & Vieux, 1999.) The franchisee will often pay a royalty fee to the franchisor and a "per product" fee on products sold in some combination.

A second category of franchising is a *chain-style business,* which is also termed a "*business format franchise*," in which a franchisee operates a business under the franchiser's trade name and is thus identified as a member of a "select group" of persons who deal in the particular business. The franchisee is ordinarily obligated to follow a standardized or prescribed format or "method of doing business" and may be subject to the franchisor's control with regard to the materials used in making the product, the design of the facility, site selection, lease negotiation, the hours of business, the qualifications and training of personnel, and the like. In consideration of receiving these services, the franchisee pays an up-front franchise fee and agrees to pay an on-going royalty. The on-going royalty allows the franchisor to provide continued training, research, product development, and support for the entire franchise system. (Perkins, Yatchak & Hadfield, 2010.) In addition, franchisees may be required to pay a percentage of gross sales for advertising expenses or, in some cases, for accounting or other ancillary services provided by the franchisor. (See Krehl v. Baskin-Robbins Ice Cream Company, 1982).

It may be interesting to note that the overall number of distributorships has *decreased* in the United States since 1972, owing to the closing of many gasoline stations, and automobile and truck dealerships (GM and Chrysler announced plans to terminate about 2,200 dealerships)-most especially in the period following the recession of 2008-2009. (See, e.g., Lafontaine & Morton, 2010.) In contrast to this decline in distributorships, chain-style franchises have increased in numbers. Large franchisors (with more than 1,000 units each) seem to dominate this category of franchising; most of these franchisors engage in either the restaurant business (Burger King, McDonald's, KFC, Pizza Hut, etc.) or in the retail sales of automotive products and services.

## VI. Franchise Fees

Most franchise systems charge franchisees a *royalty* based on a percentage of gross sales. The average royalty fee is 6.7 percent; however, the percentage varies by type of industry, ranging from 4.6 percent for restaurant and hotel franchises to 12.5 percent for personnel services franchises. Some franchise systems use a *percentage range* that allows for more flexibility based on the nature of the franchise relationship or the age or experience of the franchisor.[5] An example of a flexible formula is a sliding percentage scale that adjusts downward as unit revenues rise or is lower for new units.

*a) Advertising Fees*

A second category of fees revolves around marketing and advertising. Keup and Keup (2012) outline the six critical "pillars" of a marketing strategy especially relevant to franchising: advertising, television commercials and interactive TV, sales, direct mail, public relations, and the Internet. These "pillars" may apply both to the efforts of the franchisor initially to market its franchise opportunities or to the franchise organization or their individual franchisees to interact with the public. Franchise systems employ different types of marketing and advertising programs based on their individual industry, location and density of franchise operations, and the business model employed. There are three common advertising models: national/general, local, and cooperative/regional. National advertising is generally for established brands and "large-scale" advertising campaigns; local advertising is usually determined by the individual franchisee and specifically advertises the individual franchise operation; cooperative/regional programs usually promote the generic franchise within a geographically designated market area. Smaller or "start up" systems may only have one general advertising program, especially at the outset of operations, and may leave advertising to the individual franchise units until a national brand has developed.

Advertising fee percentages vary greatly. The average advertising fees range from 4-5%, again calculated on the basis of a percentage of gross sales; however, in practice, some franchise companies charge lower fees than those stipulated in their franchise agreements based on the ability of the franchisee to pay. In some cases, local advertising costs (including sponsoring of local sports teams, "couponing," or "special promotions") can be credited towards regional/cooperative or national requirements. Further, cooperative/regional advertising may not be fully-assessed until a national franchise operation reaches a larger size in its market.

Total franchise fees, which are a combination of royalties and advertising fees, thus may range from a low of 6.3 percent to more than double at the high end of 14 percent. As might be expected, differences in industries, the nature and frequency of services provided by the franchisor, and the perceived value of the franchisor's brand are among the factors accounting for the variance in total fees vary charged to franchisees in a franchise system.

## VII. Lines of Business

It is interesting to note the wide variety of *business format franchises* which include:

[5] An excellent depiction and summary of the top 48 U.S. franchises may be found at *AwsomeFranchises.com*, *at* http://awesome franchises.com/a-to-z-franchise-listings. The website states: "A comprehensive franchise directory containing all the information you need on current franchising available including franchise fees, franchise costs and franchise training."

- *Automotive*, including motor vehicle parts and supply stores, tire dealerships, automotive equipment rental and leasing, and automotive repair and maintenance: approximately 2%;
- *Commercial and Residential Services*, including building, developing, and general contracting; heavy construction; special trade contractors; facileties support services; services to buildings and dwellings; and waste management and remediation services: approximately 4%;
- *"Quick Service"("Fast Food") Restaurants*, including limited-service eating places, cafeterias, fast-food restaurants, beverage bars, ice cream parlors, pizza delivery establishments, carryout sandwich shops, and carryout service shops with on-premises baking of donuts, cookies, and bagels: approximately 37%;
- *Table/Full Service Restaurants*: approximately 13%;
- *Retail Food*, including includes food and beverage stores, convenience stores, food service contractors, caterers, and retail bakeries: approximately 6%;
- *Lodging*, including hotels, motels, and other accommodations: approximately 9%;
- *Real Estate*, including lessors of buildings, self-storage units, and other real estate; real estate agents and brokers; and property management and other related activities: approximately 4%;
- *Retail Products and Services*, including furniture and home furnishings stores, electronics and appliance stores, building material and garden equipment and supplies dealers, health and personal care stores, clothing and general merchandise stores, florists and gift stores, consumer goods rentals, photographic services, and book and music stores: approximately 6%;
- *Business Services*, including printing, business transportation, warehousing and storage, data processing services, insurance agencies and brokerages, office administrative services, employment services, investigation and security services, tax preparation and payroll services, and heavy equipment leasing: approximately 11%; and
- *Personal Services*, including educational services, health care, entertainment and recreation, personal and laundry services, veterinary services, loan brokers, credit intermediation and related activities, and personal transportation: approximately 8%.

a) *Product distribution franchising includes the following major categories*

- *Automotive and Truck Dealers*;
- *Gasoline Service Stations*; and
- *Beverage Bottling*, including soft drink and bottled water manufacturing, beer and ale wholesalers, and beer, wine, and liquor stores.

b) *Statistics gathered from FranchiseKnowHow. com (2013) indicate the following industries with the highest percentages of franchise operations*

- Quick Service Restaurants: 211,313; franchise operated: 125,000 or 59%;
- Mail and Copy Centers: 5,200; franchise operated: 3,546 or 68%;
- Children Exam Preparation and Tutoring: 7,192; franchise operated: 2,361 or 33%; [Dominated by Huntington, Kumon and Sylvan].
- Tax Preparation Services: 25,000; franchise operated: 5,416 or 22%; [Dominated by HR Block and Liberty].
- Real Estate Brokers: 109,400; franchise operated: 22,000 or 20%; [Led by Century 21].
- New Car Dealers: 24,888; franchise operated: 24,888 or 100%.

c) *Industries with the lowest percentages of franchise operations include*

- Beauty Salons: 81,632; franchise operated: 6,500 or 8%;
- Senior Home Care: 20,433; franchise operated: 1,677 or 8.2%;
- Home Health Care: 23,000; franchise operated: 565 or 2.5%;
- Pet Care: 11,353; franchise operated: 252 or 2.2%.

## VIII. Performance Measurement

Meeting profit or other financial expectations is critical to franchisee satisfaction. Franchisees who are satisfied are more likely to comply with system requirements that build the value of the franchised brand. Growth in franchising is generally defined by rising royalties on rising sales. Carper (2010) insists that profitability is key to both franchisee retention and franchise growth. Moreover, to be successful, the franchisor must develop a serious commitment to franchisee profitability. In order for the franchisor to determine when and how to best invest in that commitment, many turn to internal financial benchmarking as their solution. The main difficulty that franchisors may confront is that franchisees may lack critical financial and management skills, do not know how to comply with financial reporting requirements, and/or provide inaccurate or unreliable financial information because they do not understand its importance.

Financial benchmarking entails identifying a point of reference from which measurements of any sort may be made, and in doing so, it provides a process for educating franchisees on the importance of appropriate measurement. It has become customary and inarguably a good business practice to stay up-to-date with the financial performance of franchises. Note that most franchise agreements will require *benchmarking* and frequent reporting from franchisees.

Recently, Griffith University (Southeast Queensland, Australia) has determined that a higher the reporting compliance of performance metrics the better the franchise relationship tends to be. (FranchiseWire.com, 2011.) Several metrics such as inventory turnover, gross margins, repeat customers, labor costs, weekly sales, average order per customer, and employee turnover are now strongly recommended to evaluate the financial/economic success of a franchise. (Small Biz Viewpoints, 2010.) By gaining insight into how they are performing financially, franchisees and franchisors alike are in a position to better allocate resources (FranchiseWire.com, 2011) and to work toward the success of the relationship.

## IX. Benefits from Franchising

There are several general benefits to franchisees who engage in franchising. Franchising offers the opportunity to start a business despite limited capital (in the form of the initial fee) and limited business experience-which typically ranges from 0 to 7 years. Franchising also is based on the existence of that important business intangible-the *goodwill* that results from marketing a nationally or internationally known, high-quality trademark or service mark, which not only benefits the individual franchisees but also raises customer acceptance and recognition throughout the franchise system. (See, e.g., Shell Oil Co. v. Marinello, 1973). Franchising provides a unique access to the franchisor's business expertise in such areas as inventory control, warehousing, advertising, market research, product sourcing, and product innovation. Franchising also provides an assured supply of materials in a distributorship arrangement, the use of bulk-buying techniques based upon the concept of "economies of scale," and access to proven methods of employee training and supervision. (Mendelsohn, 1970; Chisum, 1973.)

On the other side of the equation, the franchisor also reaps enormous benefits from a successful franchise operation. These include a steady stream of income garnered from the franchisee's investment of capital in the business enterprise, generated through the initial franchise fee and collection of on-going franchise fees. The franchisor also will experience the influx of goodwill and other advantages flowing from the franchisee's entrepreneurial abilities, including the enhanced value of the trademark or service mark through its usage and visibility in the market place, resulting from a successful franchise operation. The franchisor will be able to avail itself of an assured distribution network, which also brings about symmetrical "economies of scale" for the franchisor in managing labor costs, producing a more certain demand curve which will also reduce wide fluctuations in sales. (Ungar v. Dunkin' Donuts of America, Inc., 1976.) On a more practical level, the operation of a franchise also provides an opportunity for employment, albeit at the "entry level," or in recent years, for seniors and younger workers who might be available at the "low end" of wage rates. From a financial point of view, franchising will often provide the franchisor with a larger asset base, the ability to secure a larger line of credit, the possibility of enhanced profits, and the diffusion of financial risks. (Brown, 1982).

## X. Master Franchising

A master franchisor has the ability to open numerous franchise locations either individually ("single unit") or by a process called "sub-franchising." (Steinberg & Campbell, 2013.) This practice is especially prevalent in two circumstances: when a "new franchise opportunity" is being created and the franchisor wishes to expand locations rapidly; or, in international franchising, where the franchisor wishes to establish large area (city/region/nation) franchises through one individual or entity which will then be responsible to create sub-franchisees either on the basis of a plan or according to the dictates of the market. (Lozada, Hunter & Kritz, 2005.) It is important to understand the distinction between a "contractual obligation" to create additional locations (which may involve expansion before time or financial realities dictate such expansion) and the "ability" or *option* to open new franchise locations.

Most franchisees awarded by U.S. franchisors to foreign entrepreneurs have been either to award "multiple-unit-franchises" to aggressive entrepreneurs who will be responsible for the development of an entire geographic region (perhaps even an entire country), either through their own efforts and resources; by sub-franchising to third parties; through some form of a "joint venture" (E.g., Weinberg & Shaw, 2012); or a licensing agreement.

### *a) Multi-Unit Franchising*

The two primary types of multiple-unit franchise development strategies involve *sub-franchisors*, who act as *independent marketing agents* and who are responsible for the recruitment and ongoing support of franchisees within their region-frequently through the use of option-contracts or "rights of first refusal"; or area *developers*, who have no resale rights but rather are themselves responsible for meeting a "mandatory development schedule" in their given region. (Steinberg & Campbell, 2013).

The inclusion of multiple-unit franchises in a franchisor's overall development strategy (through the adoption of a "strategic plan") allows for even more market penetration and less administrative burdens and costs to the franchisor. The key issues in structuring an area development agreement usually revolve around the size of the territory, fees, and the "mandatory timetable" for development of the units. The franchisor will usually retain certain rights in the event the franchisee defaults on its development obligations. The area developer will usually pay an "umbrella fee" for the development of individual franchises in a region, over and above the initial fee that is due and payable as each unit becomes operational within the territory. The amount of the fee will vary, depending on factors such as the strength of the franchisor's trademarks and market share, the size of the territory, and the term (including any renewal) of the agreement. The *development fee* is essentially a payment to the franchisor that prevents the franchisor from offering any other franchises within that region (unless there is a default, as where the franchisee fails to meet any "mandatory development schedule").

*b) Structuring Sub-Franchising Agreements*

Sub-franchising agreements present a variety of issues and problems that are not raised in the sale of a single-unit franchise or an area development agreement. In most sub-franchising relationships, the franchisor will share a portion of the initial franchise fee and ongoing royalties with the sub-franchisor, in exchange for the sub-franchisor *assuming many responsibilities associated with the "quality control" function in the given region*. The proportion in which fees are shared usually has a direct relationship to the exact responsibilities of the sub-franchisor. In addition, the sub-franchisor will receive a *comprehensive regional operations manual* that covers sales and promotions, and training and field supervision over and above the information contained in the operations manuals provided to the individual franchisees.

A sub-franchisor will enter into what is typically referred to as a *Regional Development Agreement* (RDA) with the franchisor, under which the sub-franchisor is granted certain rights to develop a particular region. The RDA is not in itself a franchise agreement to operate any individual franchise units; rather, it grants the sub-franchisor the *right* to sell franchises to individuals using the franchisor's system and proprietary marks solely for the purpose of recruitment, management, supervision, and support of individual franchisees. To the extent that the sub-franchisor itself develops units, then an individual franchise agreement for each unit must be executed.

The relationship between the franchisor and sub-franchisor is unique and complicated. The advantages to the franchisor ("Master Franchisor") include rapid market penetration, the delegation of obligations the franchisor would otherwise be required to fulfill to each franchisee in its "network," and the ability to collect a percentage of the initial franchise fee and the ongoing royalty fee from each franchisee, generally without the same level of effort that would be required in a single-unit relationship.

*c) Joint Ventures*

In the franchising context, many American franchisors have entered into foreign markets through a joint venture agreement in which parties have co-ownership and are responsible for co-development of the market. (Weinberg & Shaw, 2012). A good example is China. U.S. franchisers are continuing to play the leading role in China's franchise market since its inception in 1987 when KFC's first Chinese outlet was opened in Beijing. Major U.S. franchisers in China include:

- Catering sector: KFC, McDonald's, Pizza Hut, T.G.I. Friday's, Subway, Haagen Dazs, Starbucks Coffee;
- Retailing sector: Wal-Mart, 7-Eleven;
- Real estate brokerage: Century 21;
- Photo developing: Kodak;
- Printing service: Kinko's; and
- Footwear: Athlete's Foot. (Franchising Industry in China, 2013.)

Risks are shared by both joint venture partners and the trade marks/systems are licensed by the franchisor to the joint venture entity. A joint venture may also be established when the existing franchisor wishes to offer products or services to an existing franchise.

Before a joint venture (or partnership) can be undertaken, the following preliminary questions should be addressed:

- Exactly what type of tangible and intangible assets will be contributed by each party? Which party will possess ownership rights to the property?
- Who will own property developed as a result of the joint development efforts?
- What covenants of nondisclosure or non-competition will be expected of each joint venture partner during the term of the agreement and thereafter?
- What timetables or performance quotas for completion of the projects contemplated by the joint venture will be included in the agreement? What are the rights and remedies if these performance standards are not met?
- How will the issues of management and control be addressed in the agreement?
- What are the procedures for resolving disputes, disagreements, or deadlocks between the joint venture partners?

## XI. Some Concluding Remarks

According to the forecast of the *Franchise Business Economic Outlook* (Haller & Weisbord, 2013), the number of franchise establishments in the United States will increase by 1.5 percent in 2013. The number of jobs in franchise establishments will increase 2.0 percent in 2013, following a gain of 2.2 percent in 2012. The output of franchise establishments in nominal dollars in 2013 will increase 4.3 percent, following a 4.9

percent increase in 2012. The gross domestic product (GDP) of the *franchise sector* is projected to increase to $472 billion in 2013.

James Gillula, of *HIS Global Insights*, noted: "We continue to expect that the economy is headed for another 'spring swoon,' this time brought on by the federal government's spending sequester." However, he continued: "The primary sources of the expected slow pace of GDP growth in 2013 will have a less direct impact on the franchise sector, and we expect the franchise sector will continue to outperform within many of the industries where franchises are concentrated." (Haller & Weisbord, 2013.)

What might be expected is that *Business Services and Commercial & Residential Services* will rank as the top two sectors in both franchise employment growth and growth of the number of establishments in 2013. Surprisingly, *Real Estate* (making a remarkable comeback from the depths of 2008-2009) will rank first in output growth and will be among the top three in franchise growth for establishments and employment. *Quick Service Restaurants*-the largest franchise business line-will rank third in the growth of output. While growth of *full-service restaurant* sales industry-wide slowed in the first quarter of 2013, the 2013 forecast for full service restaurants was revised downward slightly.

It seems as if franchising is and will remain an important sector of the American economy.

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## Appendix I


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**14. Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

**15. Use of direct quotes:** When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

**16. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

**17. Never use online paper:** If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

**18. Pick a good study spot:** To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

**19. Know what you know:** Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

**20. Use good quality grammar:** Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

**21. Arrangement of information:** Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

**22. Never start in last minute:** Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**23. Multitasking in research is not good:** Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

**24. Never copy others' work:** Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

**25. Take proper rest and food:** No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

**26. Go for seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**27. Refresh your mind after intervals:** Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

**28. Make colleagues:** Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

**29. Think technically:** Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

**30. Think and then print:** When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

**31. Adding unnecessary information:** Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

**32. Never oversimplify everything:** To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

**33. Report concluded results:** Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

**34. After conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

## Informal Guidelines of Research Paper Writing

**Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

**Final Points:**

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

**General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

**Title Page:**

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

**Abstract:**

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

**Introduction:**

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

**Procedures (Methods and Materials):**

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

**Discussion:**

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

## Administration Rules Listed Before Submitting Your Research Paper to Global Journals Inc. (US)

Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals Inc. (US):

**Segment Draft and Final Research Paper:** You have to strictly follow the template of research paper. If it is not done your paper may get rejected.

- The **major constraint** is that you must independently make all content, tables, graphs, and facts that are offered in the paper. You must write each part of the paper wholly on your own. The Peer-reviewers need to identify your own perceptive of the concepts in your own terms. NEVER extract straight from any foundation, and never rephrase someone else's analysis.
- Do not give permission to anyone else to "PROOFREAD" your manuscript.
- Methods to avoid Plagiarism is applied by us on every paper, if found guilty, you will be blacklisted by all of our collaborated research groups, your institution will be informed for this and strict legal actions will be taken immediately.)
- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

## Criterion for Grading a Research Paper (Compilation) by Global Journals Inc. (US)

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| Topics | Grades | | |
|---|---|---|---|
| | **A-B** | **C-D** | **E-F** |
| ***Abstract*** | Clear and concise with appropriate content, Correct format. 200 words or below | Unclear summary and no specific data, Incorrect form<br><br>Above 200 words | No specific data with ambiguous information<br><br>Above 250 words |
| ***Introduction*** | Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited | Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter | Out of place depth and content, hazy format |
| ***Methods and Procedures*** | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads | Difficult to comprehend with embarrassed text, too much explanation but completed | Incorrect and unorganized structure with hazy meaning |
| ***Result*** | Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake | Complete and embarrassed text, difficult to comprehend | Irregular format with wrong facts and figures |
| ***Discussion*** | Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited | Wordy, unclear conclusion, spurious | Conclusion is not cited, unorganized, difficult to comprehend |
| ***References*** | Complete and correct format, well organized | Beside the point, Incomplete | Wrong format and structuring |

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