

Optimization

Journal of Research in Management

Listed in UGC with Sr. No. 702 & Journal No. 42869

Volume 9. Number 2

July-December, 2017

ISSN: 0974-0988

Research Papers

- Lagrangian Relaxation for the Capacitated Dynamic Lot Sizing Problem
Omprakash K. Gupta, Syed Ali & RRK Sharma
- What Do Backers Trust When They Do Not Know Initiators? Crowd funding Experimentation in India
Djamchid Assadi, Nadiya Marakkath & Shailesh Shinde
- Green Human Resource Management Models: Review and Proposal
Mamin Ullah
- Effects of Online Buyer Characteristics on e-Service Quality
Adil Rasool & P. Rajmohan
- Determinants of Purchase Intention of Private Brands in India: A Study Conducted on Hypermarkets of Delhi
P.K. Agarwal & Vijay Prakash Gupta
- Why Repeat the Failed Experiment? The Logic & the Economic Cost of the Note Ban
Jiten Kumar Mishra
- Quantification of Risk Appetite for Young Professionals: An Empirical Study
Abhay Raja & Niyati Dave
- Demonetization (8th November 2016): It's Impact without any Prejudice
D.R. Agarwal & Anshi Goel



GL BAJAJ

Institute of Management and Research
Greater Noida

Optimization

Journal of Research in Management

Volume 9, Number 2 July-December, 2017 ISSN: 0974-0988

EDITORIAL BOARD

Chief Patron

Shri Ram Kishore Agarwal

Chairman

GL Bajaj Group of
Institutions

Patron

Mr. Pankaj Agarwal

Vice Chairman

GL Bajaj Group of
Institutions

Chief Editor

Dr. Urvashi Makkar

Director General

GLBIMR, Greater Noida

Editor

Dr. Prachi Agarwal

Assistant Professor

GLBIMR, Greater Noida

Dr. Alain Bogé

Head of MBA Programme (Fragrance and Cosmetics), ISC Paris, School of Business (Former CEO at BGM International, France)

Dr. Arun Upneja

Dean and Professor, Boston University School of Hospitality Administration Boston, USA

Dr. H. G. Parsa

Professor, Daniels College of Business, University of Denver, USA

Dr. Djamchid Assadi

Professor, Burgundy School of Business, France

Dr. Bharath M. Josiam

Professor, Hospitality and Tourism Management, College of Merchandising Hospitality and Tourism, University of North Texas, USA

Ashish Patel

Managing Director, Morgan Franklin Consulting, MCLean, Virginia, USA

Dr. Ka Lin

Professor, Zhejiang University, Hangzhou, China

Dr. Elisante Ole Gabriel

Permanent Secretary, Ministry of Information, Youth Culture and Sports Dar Es Salaam, Tanzania

Dr. K.L. Johar

Former Vice Chancellor, Guru Jambheshwar University, Hissar, Haryana, India

Dr. Sanjiv Mittal

Professor & Dean, University School of Management Studies, GGS Indraprastha University, New Delhi, India

Dr. Madhu Vij

Professor, Faculty of Management Studies, University of Delhi, India

Dr. Shiv Kumar Tripathi

Vice Chancellor, Mahatma Gandhi University, Meghalay, India

Hashan Haputhantri

Head of Marketing, TVSL, Sri Lanka

Anjali Tuteja

EDI/SAP Consultant, Centre for Disease Control, Atlanta GA; USA

Kamalendu Bali

Director-Solutions, Concentrix, Gurgaon, India

Dr. S.M. Sajid

Professor, Department of Social Work, Jamia Millia Islamia (Former Registrar and Pro Vice-Chancellor), Jamia Millia Islamia, India

'Optimization': Journal of Research in Management is a bi-annual peer reviewed journal of GL Bajaj Institute of Management and Research, Greater Noida. It aims at bridging the gap between the known and the unknown, between theory and practice and also between perspectives of academics and those of the corporate world. It consists of multi-disciplinary, interdisciplinary empirical and conceptual research work dedicated towards advances in contemporary and futuristic research in the area of management. The Journal focuses on empirical and applied research that is relevant to practicing managers and meets the standards of academic rigor. Please refer to back page for Guidelines for Authors.

Contact Address

Chief Editor

GL Bajaj Institute of Management and Research

Plot No. 2, Knowledge Park – III, Greater Noida, G.B. Nagar, (U.P.) – 0201306 India.

Helpline Number: 8010-081-081, E-mail: director.general@glbimr.org, glbimrjournal@glbimr.org

Website: <http://glbimr.org/journal-glbimr.php>

The views expressed in the articles and other material published in 'Optimization' Journal of Research in Management does not reflect the opinions of the institute.

Copyright © GL Bajaj Institute of Management and Research, Greater Noida.

All Rights Reserved. ISSN-0974-0988

From the Desk of the Chief Editor.....

Over the past two decades, the business practices all over the world have undergone metamorphosis. Conventional business and management wisdom is becoming outdated and irrelevant because of rapid pace of technological advancements. Today's business environment is marked by emergence of various new startups that have brought completely new-fangled ecosystem of marketing practices, crowd sourcing of funds and ideas, and a very dynamic and demanding young work force. Collaboration between businesses is emerging as a means to surpass competitors by enabling faster access to new technologies and markets. In addition, the consumer too has changed drastically in terms of expectations, patience levels, choice options, and demand for one on one customization. In order to survive and remain dominant in this Volatile, Uncertain, Complex and Ambiguous (VUCA) environment; organizations need to build their ability to quickly respond to change and reinvent solutions either by combining, changing, or reapplying existing ideas. This necessitates contributions from multiple perspectives and disciplines within the realm of business and management. In view of that this bi-annual peer reviewed '**Optimization': Journal of Research and Management, Volume 9, Number 2, July-December 2017 issue** is a fervent effort to create a premier medium for the presentation of new advances and research results in business and management. Since its inception, the Journal has made outstanding progress and has exceptionally contributed in the field of research which is reflected in its increased popularity globally. In adherence to reflection of its excellence, we are pleased to inform you that '**Optimization': Journal of Research and Management** is now included in the **UGC recommended list of Journals with Sr. No. 702 & Journal No. 42869.**

Recognizing the intricate relationships amongst diverse areas of business, ***Optimization: Journal of Research in Management***, garners a wide range of theoretical and empirical research papers on themes like optimization techniques, crowd funding, green human resource management, buyer's behavior, demonetization and risk management. The Journal **intends to facilitate research based knowledge sharing among academicians and practitioners** for developing integrated approaches to the challenges thrown up by the new economy.

The first research paper "**Lagrangian Relaxation for the Capacitated Dynamic Lot Sizing Problem**" has been authored by **Omprakash K. Gupta, Syed Ali and RRK Sharma**. In this paper, the researchers propose a mathematical optimization technique, "Lagrangian Relaxation" which approximates a difficult problem of constrained optimization by a simpler problem. This method penalizes violations of inequality constraints using a Lagrange multiplier, which imposes a cost on violations, thereby using these added costs instead of the strict inequality constraints in the optimization. The next paper "**What do Backers Trust when they do not know Initiators? Crowdfunding Experimentation in India**" authored by **Djamchid Assadi, Nadiya Marakkath and Shailesh Shinde** aims to explore how crowdfunding platforms can build trust to simultaneously attract project initiators and contributors and facilitate transactions between them. The third article on "**Green Human Resource Management Models: Review and Proposal**" written by **Md. Mamin Ullah** reviews various existing research models of green human resource management (Green HRM) and proposes a comprehensive research model of Green HRM highlighting the impact of basic HRM practices and environment management practices on Green HRM practices which further leads to organizational citizenship behavior critical for the Green

HRM outcomes and environmental sustainability. The next research paper by **Adil Rasool and P. Rajmohan** on “**Effects of Online Buyer Characteristics on e-Service Quality**” reveals that Perceived overall Service Quality depends on group of factors such as Propensity of Online Buying, Actual Online Buying, Understanding levels of e-Shopping, Perceived Security on e-Payment, Preference for Physical Payment and Intensity of Internet Usage among Online Buyers. The fifth research paper entitled “**Determinants of Purchase Intention of Private Brands In India: A Study Conducted on Hypermarkets Of Delhi**” by **P. K. Agarwal and Vijay Prakash Gupta** proposes to study the impact of factors that affects the purchase intention of customers toward private brands with the broad objective to assist managers and marketers to gain good insight about the behavior of Indian buyers. The next article by **Jiten Kumar Mishra** on “**Why Repeat the Failed Experiment? The Logic & the Economic Cost of the Note Ban**” discusses the logic of using the demonetization exercise again, and analyzes its economic cost by examining the arguments of the advocates of demonetization and draws a realistic conclusion with an alternative proposal. The seventh paper entitled “**Quantification of Risk Appetite for Young Professionals: An Empirical Study**” authored by **Abhay Raja and Niyati Dave** examines dominant factors attributable to quantification of risk appetite for young professionals and suggest measures for Asset Management Companies (AMCs) to structure the schemes according to the risk profile of the investors. The last paper on “**Demonetization (8th November 2016): It’s Impact Without Any Prejudice**” by **D.R. Agarwal and Anshi Goel** examines the impact of recent demonetisation on the nation’s economy and concludes that normalcy has returned to the currency system post demonetisation on the pace of cash withdrawals has come down and the success of demonetisation is not known to the monetary authority of the country, but it claims that the move of demonetisation was well planned.

Finally, we would like to thank our contributors, advisory board members and editorial review board members for their commitment and efforts in bringing up the Journal in time and providing a knowledge sharing platform to worldwide academia, researchers and management practitioners and for taking management research to the newer peaks. We are delighted to observe the spread of our Journal to different continents and sincerely hope that this outreach will continue and more researchers and authors across continents and countries will be contributing to this Journal in future. We also welcome your feedback and suggestions to make it more enriched Journal.



Dr. Urvashi Makkar

Chief Editor and Director General
GLBIMR, Greater Noida



Contents

S.No.

Page No.

Research Papers

- | | | |
|----|---|-------|
| 1. | Lagrangian Relaxation for the Capacitated Dynamic Lot Sizing Problem | 1-5 |
| 2. | What Do Backers Trust When They Do Not Know Initiators? Crowdfunding Experimentation in India | 6-20 |
| 3. | Green Human Resource Management Models: Review and Proposal | 21-32 |
| 4. | Effects of Online Buyer Characteristics on e-Service Quality | 33-41 |
| 5. | Determinants of Purchase Intention of Private Brands in India: A Study Conducted on Hypermarkets of Delhi | 42-52 |
| 6. | Why Repeat the Failed Experiment? The Logic & the Economic Cost of the Note Ban | 53-61 |
| 7. | Quantification of Risk Appetite for Young Professionals: An Empirical Study | 62-68 |
| 8. | Demonetization (8th November 2016): It's Impact without any Prejudice | 69-80 |

Lagrangian Relaxation for the Capacitated Dynamic Lot Sizing Problem

Omprakash K. Gupta*, Syed Ali** & RRK Sharma***

Abstract

In this paper, we consider the capacitated dynamic lot-sizing problem and assume that all conditions of Wagner-Whitin (1958) model apply except the capacity restriction. We give three different formulation of the problem. We relax the capacity constraint and initiate the Lagrangian procedure. At each Lagrangian iteration, we solved the uncapacitated lot-sizing problem by the Wagner-Whitin method that runs in $O(n^2)$ time. We compare the quality of bounds so obtained. In particular, we find that the Lagrangian procedure that modified the setup cost turned out to be inferior to the Lagrangian procedure that modified only the holding cost.

Introduction

Production planning is a way of achieving a long term decision related to what work should be done in some interval amount of time or a tentative plan for how much quantity of production should occur in a certain time interval, called planning horizon. It is one of the most challenging issues for a manufacturing industry to have a perfect production plan as it directly relates to effective utilization of resources by improving various parameters including the process flow. It also optimizes the operational cost and improves the timely delivery of a product. In short, it provides improvement in quality and customer satisfaction.

However, production planning in itself is a tedious and complex job. A production planner faces various challenges about which product should be produced with how much should be the quantity to be produced keeping all available constraints of production system in mind. Sometimes, the constraints appear to be tightly bound, making it very difficult to achieve an effective production plan. It is an effective utilization of resources to keep the production goals in a certain amount of time. Karimi et al. (2003) broadly describes how the decision making in a production plan can be classified in the time ranges of long-term, medium-term and short-term.

Lot-sizing is a middle-term production planning problem in which decisions related to when and how much quantity to produce over a planning horizon is taken. The objective is to determine the periods in which production happens and the amount of quantity to be produced while utilizing the production resources (minimizing the production, setup and holding cost). Many techniques and solution procedures were proposed to achieve lot-sizes of a lot-sizing problem. As performance of a system and its productivity are the two most important parameters for a manufacturing industry to compete in the market, proper lot-sizing may result in achieving the two. This thus encourages devoted researchers to work for developing and improving the solution procedures of a lot-sizing problem.

* Ph.D., University of Houston - Downtown, College of Business, MMBA, Houston, Texas, guptao@uhd.edu

** Research Scholar, Department of Industrial and Management Engineering, IIT Kanpur, India

*** Research Scholar, Department of Industrial and Management Engineering, IIT Kanpur, India

Literature Review

Wagner and Whitin (1958) gave an algorithm to solve a basic single item uncapacitated lot-sizing problem. Zoller and Robrade (1988) made a comparison between various heuristics developed to solve the single-item dynamic lot-sizing problem. Bitran and Yanasse (1982) included the capacity constraint and provided analysis of the problem. Silver & Meal (1973) also gave a heuristic to solve the uncapacitated single item lot sizing problem with a time-varying demand rate. Federgruen & Tzur (1991), Wagelmans et al. (1992) and Aggarwal & Park (1993) reviewed the Single-item uncapacitated lot-sizing problem and present an exact solution procedure. Federgruen & Tzur (1991) provide a forward algorithm to solve the general dynamic lot sizing problem. Wagelmans et al. (1992) gave an $O(n \log n)$ linear time algorithm for the Wagner -Whitin model.

Later for the uncapacitated lot sizing problem case of Wagner–Whitin problem, Aggarwal & Park (1993) provide an algorithm based on dynamic programming. The basic contribution of these works was their attempt to reduce computational complexity as compared to the Wagner–Whitin algorithm.

Karmarkar et al. (1987) studies a single item capacitated lot-sizing problem for both uncapacitated and capacitated cases. Wolsey (1989) referred to this problem as lot sizing with startup costs. Majority of the heuristics for capacitated lot-sizing problem are based on the formulation of Manne (1958).

Practical lot sizing problems are known to be some of the hardest problems to solve. Florian et al. (1980) elaborate complexity results of the single item case of problems, while Chen & Thizy (1990) explain it for multi-item cases. It is shown that the single item capacitated problem lot-sizing problem is NP-hard for quite general objective functions. Capacitated lot sizing problem with concave cost functions (Wagner & Whitin, 2004) are solvable in polynomial time. Lot sizing with convex cost functions and no setup cost is also solvable in polynomial time. Salomon et al. (1991), Vanderbeck (1998) and Webster (1999) later gave some more complexity results of these problems. Because of the difficulty posed by these problems, numerous solution techniques have been explored to solve them.

Thizy & Van Wassenhove (1985) used Lagrangian relaxation and relaxed the capacity constraints to

decompose the bigger problem into ‘N’ sub problems; each of the sub problems are of single item uncapacitated lot sizing. These are solvable by the Wagner–Whitin algorithm. The solution of the Lagrangian problem provides a lower bound, while the upper bound is obtained by first fixing the setup variables given by the dual solution and secondly, by obtaining the solution from the resulting transportation problem.

Lagrangian multipliers are updated using the sub-gradient optimization procedure Held et al. (1974). Lozano et al. (1991) applied the Primal dual approach to solve the Lagrangian relaxation of capacitated lot-sizing problem. Diaby et al. (1992) and Hindi (1995) are some other works using Lagrangian relaxation.

Problem Description

Following are the assumptions:

1. Demand is deterministic and dynamic with planning horizon finite.
2. Per unit production cost is independent of production quantity.
3. Each unit item is produced independent from other units.
4. Lead time is known and is set to zero.
5. Back orders are not allowed.
6. Inventory holding cost is linear and is included at the end of the holding period.
7. Without loss of generality, beginning and ending inventories of a planning horizon are set to zero.
8. Production cost is the same in each period.

Formulation of Problem

The basic uncapacitated dynamic lot-sizing problem is defined as:

$$Z = \min \sum_t f_t * y_t + \sum_t h_t * I_t \quad (1)$$

Constraints:

$$I_{t-1} + X_t = d_t + I_t \quad \forall t \quad (2)$$

$$X_t \leq M * y_t \quad \forall t \quad (3)$$

$$y_t \in \{0,1\} \quad \forall t \quad (4)$$

$$X_t, I_t \geq 0 \quad \forall t \quad (5)$$

$$I_0, I_T = 0 \quad (6)$$

We consider two capacity constraints leading to three different scenarios of additional capacity restriction on w-w lot sizing rule:

$$X_t \leq C_t \quad \forall t \quad (7)$$

$$X_t \leq C_t * f_t \quad \forall t \quad (8)$$

Formulation F1 = minimize (1), Subject to (2), (3), (4), (5), (6) and (7)

Formulation F2 = minimize (1), Subject to (2), (3), (4), (5), (6) and (8)

Formulation F3 = minimize (1), Subject to (2), (3), (4), (5), (6), (7) and (8)

where,

X_t : Quantity of item produced in period t

C_t : Capacity available in period t

y_t : Setup Variable in period t

d_t : Available demand in period t

I_t : Ending inventory in period t

h_t : Per unit Inventory holding cost in period t

T : Total Number of Periods in a planning Horizon

f_t : Fixed setup cost incurred in period t

M : Large Number

λ_t : Lagrangian Multiplier

T : Total number of periods

The Lagrangian Procedure in Brief

Lagrangian relaxation is well appropriate where constraints can be sub-divided into two categories:

- “Easy” constraints: those with which the entire problem can be solved easily.
- “Difficult” constraints: those which make the problem very hard to solve.

The overall idea is to relax the problem. This is done by get ridding of the “Difficult” constraints, by removing them and putting them into the objective function with some assigned weight (the Lagrangian multiplier). Each weight represents a penalty to the solution that does not satisfy the particular constraint.

We are given the following integer linear problem:

$$Z = \min C^T * \chi$$

$$A * \chi \geq b$$

$$D * \chi \geq d$$

$$\chi \text{ integer}$$

Where,

A, D, b, c, d are all having integer entries

Let X be a set $:= \{x \text{ integral} \mid D * x \geq d\}$

It is assumed that optimization over X can be done easily, whereas after the addition of the “difficult” constraints $A * x \geq b$ makes the problem intractable. Therefore, we introduce a dual variable for every constraint of $A * x \geq b$ and $\lambda (\geq 0)$ is the vector of dual variables (Lagrangian multipliers) having the same dimension as that of vector b . For a fixed $\lambda (\geq 0)$, consider the *relaxed problem*

$$Z(\lambda) = \min C^T * \chi + \lambda^T * (b - A * \chi)$$

$$D * \chi \geq d$$

$$\chi \text{ integer}$$

This reduced problem is now solvable to with Wagner-Whitin Algorithm with fixed values of Lagrangian Multiplier. With the mentioned assumptions, it can efficiently compute the optimal value for the relaxed problem with a fixed vector λ .

Thus, in Formulation F1, F2 and F3 after applying Lagrangian relaxation by relaxing the capacity constraints (5), (6) and (5) & (6) respectively. The reduced formulations follow:

Objective function:

$$F1: Z_{lp1} = \min \sum_t f_t * S_t + \sum_t \lambda_t * (X_t - C_t) + \sum_t h_t * I_t \quad (9)$$

$$F2: Z_{lp2} = \min \sum_t f_t * S_t + \sum_t \lambda_t * (X_t - C_t * f_t) + \sum_t h_t * I_t \quad (10)$$

$$F3: Z_{lp3} = \min \sum_t f_t * S_t + \sum_t \lambda_{t1} * (X_t - C_t) + \sum_t \lambda_{t2} * (X_t - C_t * Ft) + \sum_t h_t * I_t \quad (11)$$

Each subjected to constraint (2), (3), (4), (5) and (8) respectively.

It is widely known that for every value of $\lambda > 0$, the Z_{lp} will give lower bound to the respective problem. Thus, maximizing $\sum_{i>0} Z_{lp}$ will give a better lower bound. For each feasible solution of Z_{lp} there exists a solution to the main problem which provides the upper bound. The method to improve the value of λ is through adaptive sub-gradient optimization. Fisher (1985) and Fisher (2004) explain the steps of sub-gradient optimization technique and elaborate information related to the quality of bounds.

Empirical Investigation

By varying the product demand, setup cost relative to available capacity, we made 125 different

problem data sets; 25 X50, 50X75 and 50X100 respectively.

Results & Discussions

We compare each formulation and its significant difference over the other two by standard t-tests with a 95% confidence interval. The following are the findings:

- Formulation 1 significantly differs with formulation 2 and formulation 3 in number of

iteration steps, duality gap and computation time respectively.

- Formulation 2 significantly differs from formulation 3 only in computation time.

Test of Superiority

Out of 125 problem sets, we sort the problem set according to the least duality gap among all three formulation for each problems. In conclusion:

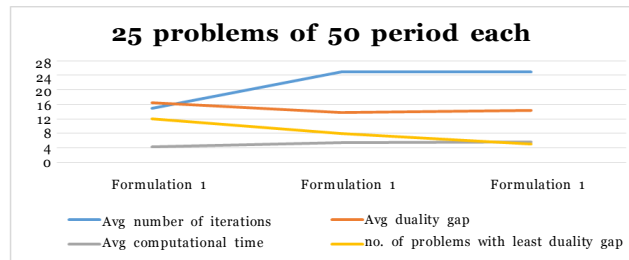


Figure 1: Findings of 25 Problems with 50 Period Each

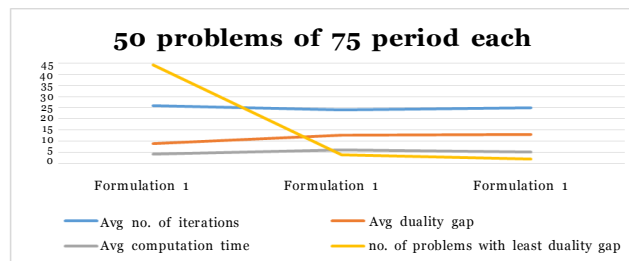


Figure 2: Findings of 50 Problems with 75 Period Each

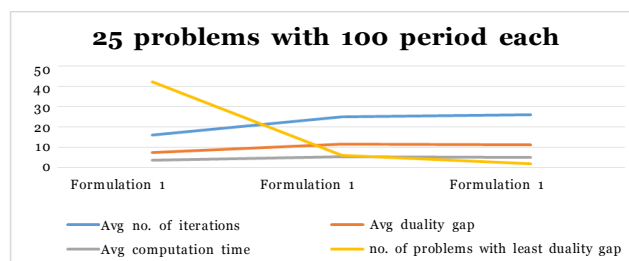


Figure 3: Findings of 50 Problems with 100 Period Each

- For 98 problem set, Formulation 1 appears to be superior.
- For 18 problem set, Formulation 2 appears to be superior.
- For 9 problem set, Formulation 3 appears to be superior.

The sole purpose of sorting is to find whether a significant difference in level of superiority exists or not. We defined hypothesis and made standard

t-tests for each of the above sets to know how much one formulation is superior over the other two.

- For 98 problem set in which Formulation 1 is superior, there exists significant difference in number of iteration steps and computation time from both formulation 2 and formulation 3 respectively.

- For 18 problem set in which Formulation 2 is superior, there exists significant difference between formulation 2 and formulation 1 in number of iteration steps, duality gap and computation time. Comparison of formulation 2 with formulation 3 results in significant difference in number of iteration steps and computational time.
- For 9 problem set in which Formulation 3 is superior, there exist significant differences between formulation 3 and formulation 1 in number of iteration. However, when compared to formulation 2, it does not yield any significant difference under the confidence interval of 95%.

Conclusion

We gave three different formulations for single item capacitated lot-sizing problem. We relaxed the capacity constraint using Lagrangian multiplier. We solved the relaxed problem through adaptive sub-gradient optimization technique to achieve lower bound. After varying the product demand, setup cost relative to available capacity, we formed 125 different data sets. The overall finding is that Formulation 1 appears superior in 98 problems. It also gives the tightest bound in less number of iterations among the three. Also, the output is achieved in less computational time. Moreover, Formulation 2 is superior in 18 problem instances and formulation 3 is superior in 9 problem instances. This paper intends to provide information for future research.

References

- Aggarwal, A. & Park, J.K. (1993). Improved algorithms for economic lot-size problem. *Operations Research*, 41(3), 549–571.
- Bitran, G.R. & Yanasse, H.H. (1982). Computational complexity of the capacitated lot size problem. *Management Science*, 28(10), 1174–86.
- Chen, W.H. & Thizy, J.M. (1990). Analysis of relaxations for the Multi-item Capacitated Lot-Sizing Problem. *Annals of Operations Research*, 26, 29–72.
- Diaby, M., Bahl, H.C., Karwan, M.H. & Zionts, S. (1992). A Lagrangian relaxation approach for very-large-scale capacitated lot-sizing. *Management Science*, 38(9), 1329–40.
- Diaby, M., Bahl, H.C., Karwan, M.H. & Zionts, S. (1992). Capacitated lot-sizing and scheduling by Lagrangian relaxation. *European Journal of Operational Research*, 59(3), 444–58.
- Federgruen, A. & Tzur, M.A. (1991). A simple forward algorithm to solve general dynamic lot sizing models with n periods in $O(n \log n)$ or $O(n)$ time. *Management Science*, 37(8), 909–25.
- Fisher, Marshall L. (1985). An applications oriented guide to Lagrangian relaxation. *Interfaces*, 15 (2), 10–21.
- Fisher, Marshall L. (2004). The Lagrangian Relaxation Method for Solving Integer Programming Problems. *Management Science*, 50(12), 1861–1871.
- Florian, M., Lenstra, J.K. & Rinnooy Kan, A.H.G. (1980). Deterministic production planning algorithms and complexity. *Management Science*, 26(7), 669–79.
- Held, M., Wolfe, P., & Crowder, H.P. (1974). Validation of subgradient optimization. *Mathematical Programming*, 6(1), 62–88.
- Hindi, K.S. (1995). Computationally efficient solution of multi-item capacitated lot sizing problems. *Computers and Industrial Engineering*, 28(4), 709–19.
- Karmarkar, U.S., Kekre, S. & Kekre, S. (1987). The dynamic lot-sizing problem with startup and reservation costs. *Operations Research*, 35(3), 389–398.
- Lozano, S., Larraneta, J., & Onieva, L. (1991). Primal–dual approach to the single level capacitated lot-sizing problem. *European Journal of Operational Research*, 51(3), 354–66.
- Silver, E.A. & Meal, H.C. (1973). A heuristic for selecting Lot Size requirements for the case of deterministic time-varying demand rate and discrete opportunities for replenishment. *Production and Inventory Management*, 14(2).
- Salomon, M., Kroon, L.G., Kuik, R. & Van Wassenhove, L.N. (1991). Some extensions of the discrete lot-sizing and scheduling problem. *Management Science*, 37(7), 801–812.
- Thizy, J.M. & Van Wassenhove, L.N. (1985). Lagrangian relaxation for the multi-item capacitated lot-sizing problem: a heuristic implementation. *IIE Transactions*, 17(4), 308–13.
- Vanderbeck, F. (1998). Lot-sizing with start-up times. *Management Science*, 44(10), 1409–1425.
- Wagelmans, A. P. M., Van Hoesel, C. P. M. and Kolen, A. (1992). Economic lot sizing: An $O(n \log n)$ algorithm that runs in linear time in the Wagner-Whitin case. *Operations Research*, 40, S145–S156.
- Wagner, H.M. & Whitin, T.M. (1958). Dynamic Version of Economic Lot Size Model. *Management Science*, 5, 89–96.
- Wagner, H.M. & Whitin, T.M. (2004). Dynamic Version of the Economic Lot Size Model. *Management Science*, 50(12), 1770–1774.
- Webster, S., 1999. Remarks on: Some extensions of the discrete lot-sizing and scheduling problem. *Management Science*, 45(5), 768–769.
- Wolsey, L.A. (1989). Uncapacitated lot-sizing problems with start-up costs. *Operations Research*, 37(5), 741–747.
- Zoller, K and Robrade, A. (1988). Dynamic Lot-sizing techniques; survey and comparison. *Journal of Operations Management*, 7(4).

What Do Backers Trust When They Do Not Know Initiators?

Crowdfunding Experimentation in India

Djamchid Assadi*, Nadiya Marakkath** & Shailesh Shinde***

Abstract

Purpose - The establishment and sustainability of the transaction depends on the willingness of the actors to meet their commitments. They are usually loyal when they trust. Trust emerges when one party believes that the other party achieves prior commitments without taking advantage of his/her exchange partner, even of the opportunity manifests.

This paper aims to explore how crowdfunding platforms can build trust to simultaneously attract project initiators and contributors and facilitate transactions between them. The focus is put on the third-party sources of trust building: cultural, politico-legal and independent certifying institutions.

Design/methodology/approach - To answer to the research purpose we adopt the method of experimentation with four fictitious, but highly plausible platforms: One platform represents the control reference. Three more platforms are designed according to the three types of third-party trust builders (as independent variables): network of acquaintance (group pressure), label of certification designated by the non-governmental professional organization, and the politico-legal authority.

Findings - The ANOVA analyses reveal unexpected results. While there are significant differences on behaviors of time spent and pages visited across the experimentation websites, the behavior of donation does not present any significant difference at the time of experimentation among the control website and the three other declinations, which are supported by different third-party builder of trust.

The differences in donation behaviors are not however statistically significant. Thus, it can be stated that the different types of third-party trust builders do not alter the magnitude of donation behaviors. They, however, do alter the stickiness behaviors.

Originality/value - Results and insights gained from this research extend the theoretical literature on trust in general and trust building in emerging P2P markets in particular. The findings also provide actionable policies for practitioners in particular in the two-sided markets where platforms need to build trust between different parties. Our results might yield to actionable policies to build trust beyond the sector of crowdfunding, which was our field of research. Consequently, marketers and business responsible managers can proactively contribute to build trust, in order to ease and speed up transactions and exchanges.

* Professor, Ph.D., Univ. Bourgogne Franche-Comté, Burgundy School of Business – CEREN, djamchid.assadi@BSB-Education.com

** Assistant Professor, Centre for Social Entrepreneurship, School of Management and Labour Studies, Tata Institute of Social Sciences, Mumbai, India, nadiya09@gmail.com

*** Student, Tata Institute of Social Sciences, Mumbai, India, nshaileshshinde@gmail.com

Introduction

Because transaction engages the handover of value between actors, its institution and perpetuation depends on actors' will to honor their commitments. While opportunism, risk and asymmetric information negatively affect actors' willingness to cooperate, trust allows them to gainfully join transactions (Jones and George, 1998). Presence or absence of trust has a bearing on what we can and choose to do (Dasgupta 2000).

To appreciate the value of trust, one might imagine a world devoid of trust; where, actors have to spend a considerable amount of time to make sure that partners could not be taken advantage of them. In such a world, they could not even resort to arbitration, because the third-party arbitrators are not trustworthy (Fukuyama, 1995). General distrust emerges with the suspicion that the disruption of expectations in one exchange is likely to generalize to other transactions (Zucker, 1986). Widespread distrust in a society imposes a kind of tax on all norms of economic activity (Fukuyama, 1995). The social tragedy of lack of trust is that society cannot achieve outcomes in which everyone is better off (Klein, 2001).

The opportunistic behavior is a major source of uncertainty about the partner's trustworthiness and consequently the raise of transaction costs (Williamson, 1991), which is one of the most important transaction inhibitors in virtual and global markets. In the case of trust deficiency, actors spend heavily on monitoring others' behavior to ensure that they respect their commitments. No one might have reliable *ex ante* knowledge of whether and when, opportunism will occur.

Trust seems to be even more important in our era of globalization and digitization where people from different cultures actually or virtually juxtapose, and consequently dispose opportunities of business only if mutual trust can reduce transaction costs between them offline (Dyer and Chu, 2003) or online (Liu et al., 2004).

Internet in particular has created an unprecedented opportunity of direct interactions and exchanges among individuals as the unstoppable raise of peer-to-peer (P2P) transactions in general, and that of crowdfunding in particular witness. Crowdfunding is a significant example. Peers call on peers across borders for contributing money, knowledge or support, however small they may be, to achieve their individual projects.

However to facilitate transactions on these two-sided markets, crowdfunding platforms need to simultaneously attract project initiators and contributors, and in fine build trust between them. How can they do this in particular when the partners do not know each other? The present paper aims to address this research inquiry. The focus is the third-party sources of trust building. In this perspective, the objective is to compare the impact of the different types of third-party sources on the trusting behavior of individuals. In short, the intention is find out whether different types of third-party trust builders have (dis)similar impacts on individuals' trusting behavior.

After this first introductory section, the remaining of the paper is structured as follows. First, we proceed to a broad review of literature on trust and sources of trust, and put emphasis mainly on third-party sources of trust that constitute the focus of the research on hands. Second, we explain the deployment of our research method of online experimentation on the third-party sources' potential of building trust in the context of crowdfunding. Third, we discuss results and present findings that can contribute to constructing a model of third-party trust that the crowdfunding platforms can adopt. Finally, we conclude and suggest further lines of research and point our perspective of further profitable extensions.

Results and insights gained from this research will contribute to both theory and practice. They extend the literature on trust in general and trust building in emerging P2P markets in particular. The findings also provide actionable policies for practitioners in particular in the two-sided markets where platforms need to build trust between different parties.

The Literature Review of Trust: Origin and Forms of Trust

We begin the analysis of trust by exploring its etymological roots. Then, we explore the specialized literature to study its sources and forms of manifestation.

The word trust originates in trade and exchange. *Traust*, meaning help and confidence, firstly recorded around 12th century in European Nordic countries, is supposedly the origin of the term. At this time, Scandinavia, Holland and the Northern land (Germany) were highly engaged in sea trade (Online Etymology Dictionary). The etymological concept of trust fits with that of

“catallactic”, which derives from a classical Greek word meaning not only “to exchange” but also “to receive into the community” and to turn from enemy into friend (Catallaxis). Trustee came into the picture by early 18th century to describe a person who is responsible for the property of another (Oxford English Dictionary, 2002).

Dictionaries currently define trust as a belief in the honesty, goodness or skill of a person, organization or a thing (Cambridge Advanced Learner’s Dictionary), or reliance on the truth of a statement of a person or strength of something, without examination (Oxford English Dictionary, 2002). Confidence, often considered inadvertently as a synonym, is rather self-reflective and corresponds to a feeling or showing of adequacy and reliance on oneself and one’s powers (The Merriam-Webster Dictionary).

Academic researchers generally agree with dictionaries and define trust as one’s psychological state to accept vulnerability based on positive expectation of another party’s intentions or behavior (Rousseau et al., 1998), or an actor’s subjective (before monitoring or independently of any capacity to do so) assessment of another actor’s performance in a particular action which positively affects his or her own action (Adler, 2001). In this perspective (mis)trust is construal, and akin to the terms knowledge and belief. It is formed because one party thinks that the other party is (un)trustworthy, or the third party can(not) comply with the trustworthy behavior.

In accordance with the above, we define trust as one’s perceptual (subjective) belief that another party respects the integrity of his/her obligations and does not exploit one’s vulnerability by betrayal and opportunism.

While trust is a cross-disciplinary concept, disciplines often tend to privilege one or several specific aspects as origins of trust (Mukherjee and Nath, 2003). Psychological literature mainly highlights one’s personality as source of trust. Management sciences and in particular marketing put emphasis on the competence and reputation of the inspiring trustee, such as brands, for generating trust for the prospects (Samuelson, Nordhaus, 2001). Some economic theories and in particular institutionalists consider that trust is built under the governance of the complying third-parties who regulate the relations between the partners of exchange and conduct them to respect their promises and engagements.

We consider a multidisciplinary literature on trust and review it according to a tripartite model of sources of trust: the one who spontaneously trusts, the counterpart who inspires trust, and the third-party who confides the possibility of a reliable transaction between partners. Other researchers have suggested similar typologies. Zucker (1986) distinguishes personal characteristics, institutions and the process of relationships as modes of trust production. McKnight and Chervany (2000) similarly identify three dimensions that lead to trust: a person’s disposition to trust, institution which provides the needed conditions for a trust, and the other party endowed with reliable traits such as competence, benevolence, integrity, and predictability. Adler also suggests a tripartite model of sources of trust: Familiarity through repeated interaction, assessment of vulnerability and trustworthy values and norms (Adler, 2001).

Truster as the Source of Trust

Trust might reside in truster’s personality and attitude, rooted in his/her early set of experiences. The personality-based trust is then prior to relationship and depends on an individual’s general inclination or willingness to collaborate and exchange without complete or prior knowledge about others.

Freudian psychologist Erik H Erikson (1902-1994) identified in his 8-stage model, the first stage (between 0-1 year, infancy or the oral-sensory stage), as the stage of psychosocial development of trust. Through the parents’ responses, the newborn learns to trust people as reliable and loving, if the parents’ (and especially mother’s) responses are adequate; otherwise, the infant develops mistrust and will be apprehensive and suspicious about people. In any case since no one can meet all a baby’s needs all the times; the newborn also learns to “mistrust”. Mistrust enables to recognize and respond appropriately to people who are untrustworthy and is a barrier against being hurt.

Both trust and mistrust are crucial for encountering other people later. If the proper balance is well achieved at this stage then the child will develop a sense that the world is trustworthy and even when things are not going well they will work well in the end. Otherwise the infant may develop maladaptation and malignancies, endangering his/her future stages of psychosocial development, composed of autonomy vs. shame and doubt, initiative vs. guilt, industry vs. inferiority, ego-

identity vs. role-confusion, intimacy vs. isolation, generativity vs. self-absorption, integrity vs. despair (Erikson 1954).

Other researchers also stress on the idea of pre-disposed psychological determinants such as personality and attitude to explain people's propensity of trust, (Scheier and Carver, 1992; Gleitman, 1995; Olson and Suls, 1998). Extravert, agreeable, open-minded people trust more, while neurotic people trust less. Extravert individuals fear the outside world and fearlessly trust and socialize with other individuals. As a general rule, the more an individual is agreeable and positive about others' values and convictions, the more s/he is trustful. A personality which is keen on trust gets easily ready for transactions irrespective of the ability to monitor the other party, expecting that (s)he will perform the promised action (Mayer, Davis and Schoorman, 1995). Psychological predispositions might sometimes impede trust. Neurotics, emotional instability, pessimism and low self-esteem often perceive their positions in interactions and transactions as unfavorable and consequently avoid trusting (Scheier and Carver, 1992; Gleitman, 1995).

Thus, the personality of the trusting party is ex-ante perception prior to any relationship and can lead to both trust and mistrust. An optimistic disposition about others generally favors trust, while a pessimistic disposition is less inclined to consider others as trustworthy (Encyclopaedia of Ethics).

Trustee as the Source of Trust

A trustor's personality is not the unique source of trust. Trust can also emerge from an individual's perception about a partner's ability, knowledge, expertise and skillfulness (Sitkin & Roth, 1993; Peters et al., 1997; Brainov & Sandholm, 1999).

A perception might drive from both rational reasons and/or affect-based motives (McAllister, 1995). Although, some researchers argue that reason and emotion are separable and partially independent (Zajonc, 1980), we believe that they both contribute to generate a cognitive attitude, and lead, in this case, to the belief about a partner's reliability. Friendship, love, predictable behavior, loyalty, care, warmth, empathy (Organ and Konovsky, 1988; Luhman, 1979; Nooteboom 1996), emotion (Lewis and Weigert, 1985), kinship (Ouchi, 1980) or similarity (Hellreigel et al., 1992; Gulati, 1995; Burt, 1992) are affect-based motives that can

significantly impact the formation of cognitive attitude.

Direct relation and credible reputation can both form an individual's cognitive attitude about a partner's ability and intention to perform according to expectations and refraining from opportunistic behavior. Butler (1991) along with Sitkin and Roth (1993) believe that an organization's trustworthiness depends on its past actions, credible reputation, and the congruence between its communications and actions. Mukherjee and Nath (2003) also consider that a trust is contingent with a brand's foregoing interactions with its market and the strength of its name. Accordingly, we review the literature on how reliable relation and positive reputation can build trust.

Trust is seldom spontaneous. It often starts with minor transactions in which little confidence is required because little risk is involved; and progressively evolves in a slow process in which partners prove their reliability and accordingly engage in lengthy relations and transactions (Shapiro, 1987).

Acquaintance is often the earliest stage in a relationship because people usually consider it inappropriate or even dangerous to interact with total strangers (Luhman, 1979; Baron and Byrne 1991). No significant relationship or trust can develop without familiarity.

A trustor does not accept great risks in the first stage and prefers to keep risks at a lowest level. Initial experiences with a brand habitually constitute a good predictor for a customer's trusting beliefs and further behavior. Satisfied first-time purchasers engage in online transactions three times more than dissatisfied first-time purchasers (BCG, 2000).

Repeated relations provide predictability about parties' upcoming behaviors (Doney & Cannon, 1997) in the vicissitudes of an uncertain future, and foster the emotional assurance about partners' care and responsiveness. Rempel et al. (1985) call this stage "dependability phase" which might finally lead to the stage of faith. The strongest trust is reciprocal when both parties are trustworthy (Encyclopaedia of Ethics).

Depicting trust on a continuum does not imply that all relationships pass through all stages. For example, an observer, in the absence of direct previous relations, might refer to "relational

signaling” (Lindenberg, 2000) that refers to observation of an agent’s treatment of his/her partners.

In relationships between firms, trust is based both on individuals who deal with each other, and on organizations as collective entities. Thus, customers perceive a brand as trustworthy, only if both its affiliate organization and people inspire confidence. However, outward trust relations can hardly exist without inward organizational trust.

Reputation, in absence of personal experience, can also procure trust. In the broadest sense, reputation stands for the spreading of one’s experiences to others via a network (Granovetter, 1985). In a business perspective, reputation indicates the aggregated evaluation of all aspects of a firm’s image (Dowling, 1994) or the net perception of its ability to meet the expectations of all stakeholders (Fombrun, 1996).

The social trait of reputation engenders trust (Williamson, 1991, Doney & Cannon, 1997). Customers feel secure to acquire and use a brand that other people perceive as fair and just (Anderson and Weitz 1992). A virtuous circle comes out of the satisfied customers who spread positive “gossip” about their preferred brands within online networks (Helm, 2000); and the latter that gains reputation and by the way attract more patrons. The greater is the network that shares the reputation of a firm, the higher is the chance of a potential customer to take notice of it. Online customers do not necessarily choose the cheapest offer on the Internet. They often purchase branded products from renowned retailers at a higher level than the lowest price (Smith et al., 2000).

Spreading the word through opinion leaders, experts and conventional media as credible multipliers of information (Einwiller, 2001), providing opportunity to the satisfied customers for spreading the good words, and relaying messages via peers through chats and virtual communities are the most effective ways of fostering the reputation of a brand online. While positive reputation is a vital source for trust (Jarvenpaa & Tractinsky 1999) in the impersonal environment of electronic commerce (Einwiller, 2001), negative words can harm and even destroy brands.

Institutions of Trust

When individuals cannot trust by internalized motives or inspiring partners, they might look for third parties disposing safeguarding mechanisms,

coercing rules and sanction possibilities (La Porta et al., 1999) for complying reliable behavior between partners. For third party-based trust to occur, three conditions are to be satisfied: an appropriate institution, acceptance of the institution’s authority by exchange partners and the conveyance of signals from the third party institution to the exchange partners.

In the following section, we review the literature on the major third party institutions of trust. They are cultural, politico-legal and non-governmental (professional) organizations.

Trust emerging from cultural values is of considerable economic value because it eliminates the need for formal contracts that are costly to negotiate, write, monitor, and enforce. People internalize beliefs about appropriate and right behavior in the process of socialization. Compliance with cultural norms of non-maleficence is secured by the threat of exclusion or non-inclusion (Kandori, 1992), and by incentives for sustainable benefits in comparison to short-term gains of non-compliance. In high-trust relationships, agents do not even worry about maximizing profits in the short run, because they are confident about regular and future gains (Fukuyama, 1995).

The enforcement costs in an informal network of mutual self-control are less than those in a law-based third-party system (Calvert, 1995a, 1995b). The intuitive idea is that excommunicating non-compliers is cheaper than selecting, training, and maintaining a cadre of experts specifically charged with enforcement responsibilities.

In this perspective, trust is a crucial ingredient of a country’s social capital, defined as the sum of norms and networks that improve the efficiency of coordinated actions for common purposes (Putnam 1993). The more social capital there is, the more productive the economy will be. Knack and Keefer (1997) find that trust is strongly correlated with GDP growth per capita and with the ratio of investment to GDP.

Culture-based trust supports economic growth by reducing transaction costs in particular in countries with less developed legal systems. While some individuals trust according to a common set of cultural norms, some others, in particular when they do not know each other, cooperate only under a system of formal rules that coerce the issuer of promise to do what is committed.

Historically, the economic growth has mainly occurred in countries with reliable institutions of

laws and enforcement mechanism that support and safeguard trust between agents (Lyons & Mehta, 1997). Economies with less developed rules and enforcement systems generally deter exchange. Marakkath and Attuel-Mendes (2015) discuss how the regulatory environment might have a constraining or leveraging impact on the microfinance crowdfunding to achieve social innovation and reduce financial exclusion.

Contract is the symbol of a politico-legal institution. It stands for a tightly written form of agreement between two or more parties according to the codes of law, intended to be legally binding (Lyons and Mehta, 1997:241).

Because consumers transfer the endorser's credibility onto the endorsed brand or organization, firms that obtain the seal of conformance to the standards and principles by legitimacy build customer trust, positively influence consumer trust, attitude, intention and opinions (Sternthal et al. 1978, McGinnies & Ward, 1980, Harmon et al. 1982, Moore et al. 1986, Ohanian, 1991). Endorsement of trustworthiness by these self-determining institutions engenders customer trust because they have no direct stake in the reputation of the inspected firms (Sternthal et al., 1978).

Endorsement by the third-party institutions is however gradual and corresponds to different levels of approval. Obviously, when a high degree of endorsement generates trust, a low degree may suggest mistrust (Cook, Luo 2003).

Government agencies and non-governmental organizations such as financial-rating agencies, corporate-conscience agencies, and consumer agencies are all credible for inspecting, testing, and evaluating and delivering certification and endorsement. Clients often trust government and professional institutions without being in a position to check their expertise, standards, procedures or trustworthiness (Lala et al., 2002, Cook, Luo 2003).

As we have already reviewed the impact of state-based institutions on trust building, we focus in this section on the non-governmental professional institutions. Examples abound: Underwriting laboratories which test and grant an approval mark to electronics manufacturers, agencies like Moody which rate public or private organizations, and Web seals, Such as Better Business Bureau, TRUSTe, that promote feelings of trust (Houston & Taylor, 1999; Palmer, Bailey & Faraj, 2000) and influence users' intents to purchase online (Kovar et al., 2000; Mauldin

& Arunachalam, 2001; Wakefield, 2001). Internet users likely assign higher levels of value to seals from endorsing firms that they consider highly credible, trustworthy, or expert (Hoxmeier, 2000).

Research Design of Experimentation on the Internet

The inquiry we started with was to find out whether different types of third-party trust builders have (dis)similar impacts on individuals' trusting behavior on the two-sided markets of online crowdfunding. To answer to this inquiry we adopt the method of experimentation.

The method of experimentation consists of controlling conditions for observing the impact of the independent (experimental) variables' manipulation on the dependent variable's response. If a change in independent variable(s) causes changes in dependent variable, then a "cause-effect" relation is identified between them. All variables are controlled, so that the effect can be attributed to some of them as causes. In this method independent variables are usually designated by X, and dependent variable by y.

Online experiments return similar results -but not identical- to conventional experiments (Krantz and Dalal, 2000) at faster speed and lower cost (Reips 2002). Slater et al. (2006) reproduce the Milgram obedience experiments in the online virtual space and report similar behaviors in virtual and onsite environments. It is worth reminding that the Milgram experiment (1963) aimed to investigate how far people could go in obeying an instruction if it involved harming another person. Kozlov and Johansen (2010) also observe similar behaviors in virtual, lab and field environments.

Researchers progressively exploit the technical possibilities of the Internet for deploying online experiment. Fogg et al. (2001) conduct two online experiments on Web site credibility. They firstly find that Web banner ads reduce the perceived credibility of a Web page's content. They also find that attribution elements such as author photographs affect the credibility of Web content. This is similar to the experiment of Johnson (2007) on credibility of participatory journalism in which ordinary citizens produce content on web sites, such as ohmynews.com. Johnson's experiment (2007) aimed to test whether or not the presence of information about a writer on a participatory journalism web site affects the perceived credibility of the story.

Kamali and Loker (2002) implemented three levels of interactive design involvement on a mock Web site, T-shirt.com, in an online experimentation. Treatment one, the control, simulated a customer's involvement at traditional retail stores or Web sites. It offered five ready-to-wear garments with three pre-designed variables: style, color, and graphic images. Treatment two, limited customization, simulated custom T-shirt shops where customers had a limited choice of components. Participants were able to mix and match from components of style (2), color (5), and graphic images (5) making a total of 50 possible combinations (i.e., $2 \times 5 \times 5$). Treatment three, advanced customization, offered five neckline options, five sleeve options, 20 color options, three bodice lengths, five graphic images, and five placements/sizes or from 37,500 possible combinations (i.e. $5 \times 5 \times 20 \times 3 \times 5 \times 5 = 37,500$). Participants in the limited and advanced customization treatment groups were able to combine a variety of design components and view them using the interactivity of the Web site.

Bainbridge (2007) asserts that the online virtual worlds have great potential for research in the social, behavioral, and economic sciences, as well as in human-centered computer science. Bainbridge (2007) examines a number of research methodologies that scientists explore in the virtual reality of Second Life and World of Warcraft, including formal experimentation, observational ethnography, and quantitative analysis of economic markets or social networks. Kozlov and Johansen (2010) present virtual reality as an ideal space for experiments because it provides a significant level of control and a less contrived context.

Hooley et al. (2012) plot a matrix with synchronous and asynchronous on one axis and text-based and multi-media on the other. Wiersma creates a similar matrix with "lab" particular online environment (equivalent to a conventional lab) and "field" (actual online behavior of individuals) on one axis and "web-based" and "virtual reality" (Second Life and World of Warcraft) on the other.

Mosteller et al (2014) also consider the field of websites to build on fluency theory according to which if people easily comprehend ideas or information, they are more likely to believe them. They examined how perceived fluency of the verbal online information impact on consumers' choice satisfaction with an online shopping task. Their experiment shows that cognitive effort and positive effect influence judgments about the perceived quality of the choice made.

For engaging participants in an experiment, Hooley et al. (2012) suggest to use some kind of payment or incentive. Accordingly, they provide the example of a case study (Suri and Watts 2011), which uses micro-payments to recruit participants.

An experimental design consists of: Identifying independent and dependent variables, Defining levels of experimental treatment, designating test units and their affection into different groups, and finally minimizing (eliminating, if possible) the influence of bias, extraneous and confounding factors, on the results of the experimentation. We adapt all these components to our research. In our study, the independent variable is the third-party source of trust, and the dependent variable is the behavior of granting of qualified people who visit a specialized website to decide to whom the funds should be granted. The dependent variables are the website stickiness that refers to two factors: time spent in general and number of visited pages on a website. For our experimentation, we consider a period of 15 days.

We conducted the experiment in a "natural setting", i.e. out of computer lab. The platforms were evidently fictitious, but highly plausible. Our design considered three different levels for independent variables, knowingly network of acquaintance (group pressure), label of certification designated by the non-governmental professional organization, and the politico-legal authority. Consequently, four different platforms were constructed according to the three source of the third party-based trust:

Website India Donates 1- Plain story

Website India Donates 2- Friends

Website India Donates 3- Government

Website India Donates 4- Regulator certifications.

The objective was to observe the effect of each level of manipulation on the dependent variable (jury visitors' granting behavior). The "test unit" in our experiment is the visitors of a platform specialized in grant distribution. These visitors, as elected and qualified jury members, decide to affect the Website's collected funds to candidates whose cases and/or photos are posted.

Consequently, the experiment was based on observing the behavior of jury members visiting four versions of a touristic website. One version, the control group, is the platforms without any signal of third-party source of trust. The other three versions are each based on a specific signal of third-party source of trust. Except these signals, different versions are all similar.



Figure 1: Platforms of Control and of Experimentation

We Stated Three Hypotheses

H1. People grant more to candidates who are observed in the time of experimentation by acquaintances and relatives than to those who postulate for grants, independently.

H2. People grant more to candidates who are met in the time of experimentation on the websites, which are labeled by the non-governmental professional certifiers.

H3. People grant more to candidates who are met in the time of experimentation on the websites, which are observed by the politico-legal authorities.

Participants were recruited from students of different institutions in three different cities in the state of Maharashtra, India.

- Tata Institute of Social Sciences, Mumbai (TISS) : These students are pursuing their Masters degree in Social Sciences and come from various states of India.
- College of Engineering, Pune (COEP) : These students are pursuing their Bachelor's degree and come from various districts of Maharashtra State, India.
- Sinhagad Institutes, Pandharpur (SKNSBS) : These students are pursuing their Masters degree in either Business Administration or Computer Application and come from Western part of Maharashtra, India.

Participants received emails and were invited to visit the platforms at their convenience within a period of 20 days, from October 14, 2014 to November 3, 2014. Participants were divided into four sets and randomly assigned to different platforms of experimentation. We finally conducted the experiment with about 179 students.

Participants were initially introduced to the purpose of the study by a letter as follows:

India Donates is a specialized crowdfunding website for supporting and assisting young adult students in their basic initial projects of education, entrepreneurship and family building. India Donates helps talented students to get rid of financial needs in perspective of successfully integrating society and achieving their dreams. India Donates plans to be operational on the Internet in the spring of 2015. Prior to launch, the company wants to test its website with potential customers.

Then, participants were asked to visit the assigned website. The online behavior of each participant, in terms of spent time and page views, is automatically recorded. A pilot test was conducted with students to check the manipulations of all variables and questionnaire.

After the visit, participants were invited to fill a short questionnaire where they mainly indicated their gender, origin, age and general feeling about

the websites. This questionnaire contained a few more “distracting” questions to avoid the Hawthorn Effect, an experimental effect that is caused by the participants knowing that they are being watched and not as a result of the experimental intervention directly.

The collected data, analyzed by the software program Google Analytics, offered insights on time spent on each story, the donations received for each story, and page views.

Table 1: Questionnaire at the End of Website Visiting

1.	For me the general visual appearance of the site is... (1 = very unappealing, 5 = very appealing)
2.	For affecting a grant, I find the content displayed on the website (1 = not informative, 5 = highly informative)
3.	Which of the following best describes your reaction to the trustworthiness of the website? (1 = not trustful, 5 = highly trustful)
4.	How do you evaluate the general level of trustworthiness of the student candidates on the Website? (1 = not trustful, 5 = highly trustful)
5.	Has visiting the website have you like crowdfund more? (Yes/No/Can't say)
6.	Does the website content help to affect grants? (Yes/No/Can't say)
7.	In your opinion, do the students who receive the funds use them in a proper way as it is announced in their case profile presentation? (1 = very unlikely, 5 = most likely)
8.	Which of the following age groups do you belong to? (<19, 20-25, 26-34, 34-49, 50+)
9.	What do study in higher education?
10.	What is your grade?

Results, Findings and Discussion

For data analysis, we first proceed to the tabulation of frequency distribution of all the assigned variables. We then performed ANOVA (Analysis of Variance) test to explore if there are any differences in the impact of different types of websites on visitors/jury's behaviors. ANOVA, developed by Ronald Fisher, is a pertinent statistical tool for our experimentation because it allows to find out whether observations on different groupings of independent variables of types of websites bearing different third-party trust builders explain variance in the dependence variable (time spent, pages visits, donation amounts). Accordingly, the two following tables illustrate simple statistical

tabulations of data collected on stickiness (time spent and number of pages visited by visitors), and on amount of donation made per website. We remind that our experimentation lasted over a period of 20 days.

As the table 2 shows the bare-bone website of experimentation control, without any third party witness, is less visited in time and number of pages called on. The websites bestowed by third-party trust builders display different performance.

The rank number one is attributed to the website supported by public authority (government) for the independent variable “time spent”; and to the website supported by friends for the variable “pages

Table 2: Time Spent (in Seconds) and Number of Pages Visited by Visitors on the Websites by Type of Independent Variable

Platform India Donates	# Visitors	Time Spent		Pages visited by visitors	
		Total	Average/visitor	Total	Average/visitor
Control platform	44	12833	291.65	284	6.45
Friends platform	40	12509	312.72	529	13
Government platform	38	14584	383.78	388	10.21
Certifier platform	54	19001	351.87	417	7.72

visited". For the rank number two, the website certifier stands for the variable "time spent"; and the website government for the variable "pages visited". The website with the friends' presence, and that of certifier hit the third place, respectively, for "time spent" and "pages visited" variables.

We continue our data analysis to determine whether time that visitors spend and number of pages they call on are statistically significant among different declinations of the website India Donates.

For the time spent among the four website versions, the hypotheses are:

- H₀: There is no difference in the length of time visitors spent on the four websites.
- H₁: There is a significant difference in the time that visitors spent on the four websites.

The below table 3 shows that the significance value is 0.0 -so less than 0.05. Hence, the null hypothesis is rejected, and the alternate hypothesis is accepted:

Table 3: ANOVA Test for Time Spent Across the Four Website Versions of India Donates

Sum of Squares	Difference	Mean Square	F	Significance	
Between Groups	142803.876	3	47601.292	8.304	.000
Within Groups	9257589.751	1615	5732.254		
Total	9400393.627	1618			

"There is a significant difference in the time visitors spent on the four websites".

After the variable "time spent", we apply ANOVA Test to the variable of number of pages visited. The hypotheses are:

- H₀: There is no difference in the number of pages visitors call on among the four websites.

- H₁: There is a significant difference in the number of pages visitors call on among the four websites.

Once more, as the table 4 displays with the significance 0.00, the null hypothesis is rejected, and the alternate hypothesis is accepted. Thus: There is a significant difference in the number of pages visitors call on among the four websites.

Table 4: ANOVA Test for Page Views Across the Four Website Versions of India Donates

	Sum of Squares	Difference	Mean Square	F	Significance
Between Groups	1506.857	3	502.286	10.124	.000
Within Groups	80128.528	1615	49.615		
Total	81635.385	1618			

According to the above analysis, we conclude that there is significant difference between these two variables. In other words, the third-party trust builders have significant impacts on the juries' behavior in terms of time spent and pages visited on the platforms.

Now, the question is whether the impact is the same on donation behaviors. For the simple tabulation, the table 5 plainly displays that the website India Donates-Friends receives the highest

amount of donation for all categories (total, average per website, and average per number of visitors donated), whereas the website India Donates-Control receives the lowest- with a considerable difference of less than the half. Visitors' behavior for donation is clearly like their behaviors regarding number of pages visited per website.

Our ANOVA Test now considers whether there are statistically significant differences on amounts of donation among the four website versions.

Table 5: Analysis of the Donations (in Rupees) Made by the Jury (Visitors) Per Type of Website (Independent Variable)

Platform India Donates	# Visitors	Total	Average Donation Per Website	Average Donation Per Jury
Control platform	44	61350	632	1394
Friends platform	40	154000	1033	3850
Governmentplatform	38	131800	1021	3468
Certifierplatform	54	116650	948.37	2160

The hypotheses are, thus:

- Ho: There is no difference in the visitors' donation behaviors among all four websites
- H1: There is a significant difference in the visitors' donation behaviors among all four websites.

From table 6, it is clear that the significance value 0.181 is greater than 0.05. Hence we reject the alternate hypothesis and accept the null hypothesis that "There is no difference in the visitors' donation behaviors among all four websites", even though the previous simple tabulations seemed suggestion that the donation behaviors are different among the experimentation websites.

Table 6: ANOVA Test for Donations Across the Four Website Versions of India Donates

	Sum of Squares	Difference	Mean Square	F	Significance
Between Groups	11310004.748	3	3770001.583	1.632	.181
Within Groups	1140831320.554	494	2309375.143		
Total	1152141325.301	497			

The ANOVA analyses reveal unexpected results. While there are significant differences on behaviors of time spent and pages visited across the experimentation websites (the alternate hypothesis H1 validated), the behavior of donation does not present any significant difference at the time of experimentation among the control website and the three other declinations, which are supported by different third-party builder of trust (the null hypothesis Ho validated).

The differences in donation behaviors appeared in the simple tabulation (table 6) are not statistically significant. Thus, it can be stated that the different types of third-party trust builders do not alter the magnitude of donation behaviors. They, however, do alter the stickiness behaviors.

One plausible explanation is that different third-party institutions of trust, friends and relatives (culture), politico-legal organs (state and

Table No. 7: Visiting Behavior

Visiting Behavior				
Website India Donates	Time spent (second) on platform (% , rounded)		Number of visited pages	
	Male	Female	Male	Female
1. Control website	3723 (29%)	9110 (71%)	119	165
2. Friends	7965 (64%)	4544 (36%)	323	206
3. Government	8508 (58%)	6076 (42%)	243	145
4. Certifier	12869 (68%)	6132 (32%)	327	90

governments), and professional certifiers, quickly ensure the visitors to decide whom to donate. So, they indifferently provide trust to donors. The other explanation is that visitors do not need to be supported by third-party sources of trust for donating. In other words, in presence of trust building factors, people with donor mindset explore more profiles to donate.

From Table 4, the significance value of 0.000 indicates that results are statistically significant for different trust factors and the hypothesis H3 stands validated. In other words, when different trust factors are involved people with donor mindset explore more profiles and donate to more

candidates.

From Tables 8 and 9, it was found out that the contribution of males in the total amount of donations was higher than that of females except in the case of Website IndiaDonates 1- Plain story. Women donated more when the network of friends was involved as in the case of Website IndiaDonates 2- Friends while men donated more when the Regulatory certifications were involved in the websites. Similar pattern was observed in terms of time spent by men and women on these websites. Men contributed more to the total time spent on all the websites except in case of Website IndiaDonates1- Plain story.

Table 8: Donation Behavior

Donation Behavior				
Website India Donates	In value, Indian rupees (%, rounded)		Number of time of donating	
	Male	Female	Male	Female
1. Control website	29500(48%)	31850 (52%)	40	57
2. Friends	99150(64%)	54850 (36%)	81	68
3. Government	76750(58%)	55050 (42%)	82	47
4. Certifier	99500(85%)	17150 (15%)	95	28

Conclusion

We began this exploratory research by wondering whether different third-party sources of trust builders, cultural, politico-legal and independent certifying institutions, have different impact on individuals' trusting behavior. We settled that the different types of third-party trust builders do not alter the magnitude of donation behaviors; however they do alter the stickiness behaviors.

Our results might yield to actionable policies to build trust beyond the sector of crowdfunding, which was our field of research. Consequently, marketers and business responsible managers can proactively contribute to build trust, in order to ease and speed up transactions and exchanges. In this perspective, the results can support the four patterns of services innovations in financial institutions that Martovoy and Mention suggest (2016): the bank's response to a problem, the proactivity-driven innovation, the market emphasis and the strategy-based service generation.

Though quantitative analysis is used, the article leaves unclear some other quantitative aspects of

trust. Different questions relative to measurement and cost of trust building can be raised: what is the relation between the cost of a marketing strategy for building trust and the impact of the created trust on sales? While the causal relation between trust and transaction is self-evident, one should get some interest in exploring regression analysis, between amount of trust and that of marketing outcomes. Other quantitative inquiries can also be considered.

References

- Adler, P. S. (2001). Market, hierarchy and trust: The knowledge economy and the future of capitalism. *Organization Science*, 12(2), 215
- Anderson, E. & Weitz, B. (1992). The use of pledges to build and sustain commitment in distribution channels. *Journal of Marketing Research*, 29 (1), 18-34.
- Ba, et al. (1999). Building Trust in the Electronic Market through an Economic Incentive Mechanism. In Proceedings of the 20th International Conference on Information Systems (AIS 1999), Charlotte, NC, 1999.
- Bainbridge W. S. (2007). The Scientific Research Potential of Virtual Worlds, *Science*, 317 (5837), 472-476.

- Baron, D., and Byrne, E. (1991). *Social Psychology*. 6th ed. Boston: Simon and Schuster.
- BCG, The Boston Consulting Group. (2000). The Race for Online Riches: E-Retailing in Europe. <http://www.bcg.com>. [20.07.2000].
- Brainov, S. & Sandholm, T. (1999). Contracting with uncertain level of trust. *Proceedings of ACM Conference on Electronic Commerce*.
- Burt, R.S. (1992). *Structural Holes: The Social Structure of Competition*. Cambridge, MA: Harvard University Press.
- Butler, J. (1991). Toward understanding and measuring conditions of trust: Evolution of conditions of trust inventory. *Journal of Management*, 17 (3), 643-663.
- Calvert, R. (1995a). The Rational Choice Theory of Social Institutions: Cooperation, Coordination, and Communication. J. Banks and E. Hanushek, eds., *Modern Political Economy: Old Topics, New Directions*. Cambridge: Cambridge University Press: 216-267.
- Calvert, R. (1995b). Rational Actors, Equilibrium, and Social Institutions. J. Knight and Sened, eds., *Explaining Social Institutions*. Ann Arbor: University of Michigan Press: 57-93.
- Cambridge Advanced Learner's Dictionary, Online: 16. May 2005 <http://dictionary.cambridge.org/results.asp?searchword=trust>
- Cook D. P., Luo. W. (2003). The Role of Third-Party Seals in Building Trust Online. *E - Service Journal*, 2(3), 71.
- Dasgupta, P. (2000). Economic Progress and the Idea of Social Capital. In Dasgupta, P. and Serageldin, I. (Eds.), *Social Capital: A multifaceted perspective*. Washington, D.C: World Bank.
- Dean, D. H., & Biswas. A. (2001). Third-Party Organization Endorsement of Products: An Advertising Cue Affecting Consumer Pre-purchase Evaluation of Goods and Services. *Journal of Advertising*, 30(4), 41-57.
- Doney, P.M., and Cannon, J.P. (1997). An examination of the nature of trust in buyer-seller Relationships. *Journal of Marketing*, 61 (2), 35-51.
- Dowling G. R., (1994). *Corporate Reputations: Strategies for Developing the Corporate Brand*. Kogan Page.
- Dyer, J. H., Chu, W. (2003). The role of trustworthiness in reducing transaction costs and improving performance: Empirical evidence from the United States, Japan, and Korea. *Organization Science*, 14(1), 57.
- Einwiller, et al. (2000). Engendering Trust in Internet Businesses Using Elements of Corporate Branding. In Proceedings of the 2000 Americas Conference on Information Systems (AMCIS 2000), Long Beach, CA, August 2000.
- Einwiller, S., & Will, M. (2001). The role of reputation to engender trust in electronic markets. 5th International Conference on Corporate Reputation, Identity and Competitiveness, (Paris, France).
- Einwiller, Sabine. (2001). The significance of reputation and brand for creating trust in the different stages of a relationship between an online vendor and its customers. Proceedings of the 8th Research Symposium on Emerging Electronic Markets (RSEEM2001), September 16 18, Maastricht, NL.
- Erikson, E. H. (1954). Identity and the life cycle. *Psychological Issues*, 1(1).
- Fogg BJ, J. Marshall, T. Kameda, J. Solomon, A. Rangnekar, J. Boyd, B. Brown (2001). Web credibility research: a method for online experiments and early study results. In *CHI '01 Extended Abstracts on Human Factors in Computing Systems* (CHI EA '01). ACM, New York, NY, USA, 295-296.
- Fombrun, C.J. (1996). *Reputation: Realizing Value from the Corporate Image*. Boston: Harvard Business School Press.
- Fukuyama, F. (1995). *Trust*. Free Press.
- Fung, R. K. K., and Lee, M. K. O. (1999). EC-Trust (Trust in Electronic Commerce): Exploring the Antecedent Factors." Proceedings of the 5th Americas Conference on Information Systems, Milwaukee, WI, 517-519.
- Giliotman, H. (1995). *Psychology*. (4th ed.). New York: W. W. Norton & Company
- Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 91, 481 510.
- Gulati, R. (1995). Does familiarity breed trust? The implications of repeated ties and contractual choice in alliances. *Academy of Management Journal*, 38, 85-112.
- Harmon, R. R., & Coney, K. A. (1982). The persuasive effects of source credibility in buy and lease situations. *Journal of Marketing Research*, 19, 255-260.
- Hellreigel, D., Slocum J.W. Jr, and Woodman, R.W. (1992), *Organisational Behaviour*, St.Paul, MN: West Publishing Company.
- Helm, S. (2000). Viral Marketing – Establishing Customer Relationships by “Word-of-mouse”. In Schmid, Beat F.; Tomczak, Torsten; Schoegel, Markus; Buchet, Brigitte: EM – Electronic Commerce and Marketing. EM – Electronic Markets, 10(3), November.
- Hoffman, et al. (1999). Building Consumer Trust Online. *Communications of the ACM*, 42, 80-85.
- Hooley, T., Marriott, J., & Wellens, J. (2012). Online experiments. In *What is Online Research?: Using the Internet for Social Science Research* (The ‘What is?’ Research Methods Series, 91–106. London: Bloomsbury Academic. Retrieved July 1, 2014, from <http://dx.doi.org/10.5040/9781849665544.ch-007>
- Houston, R. W., and Taylor, G. K. (1999). Consumer Perceptions of CPA Web Trust SM Assurances: Evidence on Expectation Gap. *International Journal of Auditing*, (3), 89-105.
- Hoxmeier, J. (2000). Software preannouncements and their impact on customer's perceptions and vendor reputation. *Journal of Management Information Systems*, 17(1), 115-139.
- Jarvenpaa, S.L., and Tractinsky, N. (1999). Consumer Trust in an Internet Store: A Cross-Cultural Validation. *Journal of Computer-Mediated Communication*, 5(2). Online: 6. December 2005 <<http://jcmc.indiana.edu/vol5/issue2/jarvenpaa.html>>

- Johnson K. A. (2007). The impacts of hyperlinks and writer information on the credibility of stories on a participatory journalism web site. *Proceedings of the 11th IFIP TC 13 international conference on Human-computer interaction*, September 10-14, Rio de Janeiro, Brazil
- Jones, G.R., & George, J.M (1998) The experience and evolution of trust: Implications for cooperation and teamwork. *Academic of Management Review*, 23(3), 531-546.
- Kamali, N., & Loker, S. (2002). Mass Customization: On line Consumer Involvement in Product Design. *Journal of Computer Mediated Communication*, 7(4).
- Kandori, M. (1992). Social Norms and Community Enforcement. *Review of Economic Studies*, 59, 63-80.
- Klein, B. D., (2001). The demand for and supply of assurance. *Economic Affairs*, 4-11 <http://www.iea.org.uk/files/upld-article16pdf?.pdf> >
- Knack, S. and Keefer, P. (1997). Does Social Capital Have an Economic Payoff? A Cross-Country Investigation. *Quarterly Journal of Economics*, 112 (4), 1251-1288.
- Kovar, S. et al. (2000). Consumer responses to the CPA Web Trust assurance. *Journal of Information Systems*, 14(1), 17-35.
- Kozlov, M.D. and Johansen, M.K. (2010). Real behavior in virtual environments: psychology experiments in a simple virtual-reality paradigm using video games. *Cyberpsychology, Behavior and Social Networking*, 13(6), 711-14.
- Krantz, J.H. and Dalal, R.S. (2000). *Validity of web-based psychological research*, in M.H. Birnbaum (ed.), *Psychological experiments on the Internet*, San Diego, CA: Academic Press, 35-60.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. (1999). Trust in Large Organizations, *American Economic Review Papers and Proceedings*, May, 1997. Reprinted in P.Dasgupta and I. Serageldin, eds. "Social Capital: A multifaceted Perspective", Washington, DC: The World Bank.
- Lala, V. et al. (2002). The impact of relative information quality of e-commerce assurance seals on Internet purchasing behavior. *International Journal of Accounting Information Systems*, 3(4), 237-253.
- Lewis, J. D., and Weigert, A. (1985). Trust as a Social Reality. *Social Forces*, 63(4), 967-985.
- Lindenberg, S. (2000). It takes both trust and lack of mistrust: the workings of cooperation and relational signalling in contractual relationships. *Journal of Management and Governance*, 4, 11-33.
- Liu C., Marchewka, J.T., Ku, C. (2004). American and Taiwanese perceptions concerning privacy, trust, and behavioural intentions in e-commerce. *Journal of Global Information Management*, 12(1),18. <<http://gateway.proquest.com>>
- Luhman, N. (1979). *Trust and Power*. New York: Wiley.
- Lynch, et al. (2001). The Global Internet Shopper: Evidence from Shopping Tasks in Twelve Countries. *Journal of Advertising Research*, 41(3),15-23.
- Lyons, B., and Mehta, J. (1997). Contracts, opportunism and trust: self-interest and social orientation. *Cambridge Journal of Economics*, 21, 239-57.
- Marakkath N., Attuel-Mendes (2015). Can microfinance crowdfunding reduce financial exclusion? Regulatory issues. *International Journal of Bank Marketing*, 33(5), 624 – 636
- Martovoy, A., & Mention, A. L. (2016). Patterns of new service development processes in banking. *International Journal of Bank Marketing*, 34(1).
- Mauldin, E., & Arunachalam, V. (2001). An experimental examination of alternative forms of Web assurance for business-to-consumer e-commerce. *Journal of Information System*, 76(1), 3354.
- Mayer, R.C., Davis, J.H. and Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Journal*, 20(3), 709-34.
- McAllister, D.J. (1995). Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 38, 24-59.
- McGinnies, E., and Ward, C.D. (1980). Better Liked Than Right: Trustworthiness and Expertise as Factors in Credibility. *Personality and Social Psychology Bulletin*, 6 (3), 467-472.
- McKnight, D.H. and Chervany, N.L. (2000), What is Trust? A Conceptual Analysis and an Interdisciplinary Model. In *Proceedings of the 2000 Americas Conference on Information Systems (AMCIS 2000)*, Long Beach, CA, August 2000.
- Milgram, S. (1963). Behavioral Study of Obedience. *Journal of Abnormal and Social Psychology*, 67 (4), 371-378.
- Moore, D. L. et al. (1986). Time compression, response opportunity, and persuasion. *Journal of Consumer Research*, 13, 85-99.
- Mosteller J., N. Donthu, S. Eroglu. (2014). The fluent online shopping experience. *Journal of Business Research*, Available online 27 March.
- Mukherjee, A., and Nath, P. (2003). A model of trust in online relationship banking. *The International Journal of Bank Marketing*. Bradford: 21(1), 5-11, <<http://gateway.proquest.com> >
- NFO Interactive, (2001). Online Retail Monitor Study about Consumer Buying Habits is Released. NFO Interactive Press Release January 4 2001. Online: 12. June 2005 <<http://www.nfoi.com/nfointeractive/nfoipr01042001.asp>>
- Nooteboom, B. (1996). Trust, opportunism and governance: a process and control model. *Organization Studies*, 17(6), 985-1010.
- Ohanian, R. (1991). The Impact of Celebrity Spokespersons', Perceived Image on Consumers' Intention to Purchase. *Journal of Advertising Research*, 46-53.
- Olson, D. B. and Suls, J. (1998). Self, other and ideal judgments of risk and caution as a function of the five factor model of personality. *Personality and Individual Differences*, 28, 425-436. Online: 5. June 2005 <<http://www.m-w.com/cgi-bin/dictionary?book=Dictionary&va=trust>>

- Organ, D.W., and Konovsky, M. (1988). Cognitive versus affective determinants of organisational citizenship behaviour. *Journal of Applied Psychology*, 74,157-64.
- Ouchi, W.G. (1980). Markets, bureaucracies and clans. *Administrative Science Quarterly*, 25(1), 129-43.
- Palmer, J.W., Bailey, J.P., and Faraj, S. (2000). The role of intermediaries in the development of trust on the WWW: The use and prominence of trusted third parties and privacy statements. *Journal of Computer-Mediated Communication*, 5(3). Online: 8. December 2005 <[http://www .ascusc.org/ jcmc/ vol5/issue3/palmer.htm](http://www.ascusc.org/jcmc/vol5/issue3/palmer.htm)>
- Putnam, R.D. (1993). *Making Democracy Work – Civic Traditions in Modern Italy*. Princeton,NJ: Princeton University Press.
- Reips, U.-D. (2002). Standards for internet-based experimenting. *Experimental Psychology*, 49(4), 243–56.
- Rempel, J.K. et al., (1985).Trust in Close Relationships. *Journal of Personality and Social Psychology*, 49, 95-112.
- Rousseau, D.M. et al., (1998). Not so Different after all: A Cross-Discipline View of Trust. *Academy of Management Review*, 23(3),393-404.
- Samuelson P. A., Nordhaus, W.D. (2001). *Economics*. 17th edition. McGraw-Hill Irwin
- Scheier, M. F., and Carver, C. S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research*, 16, 201-228.
- Shapiro, S. P. (1987). The Social Control of Impersonal Trust. *American Journal of Sociology*, 93, 623 658.
- Sitkin, B. S., and Roth, L. N. (1993). Explaining the Limited Effectiveness of Legalistic “Remedies” for Trust/Distrust. *Organization Science*,4(3), 367-392.
- Slater, M., Antley, A., Davison, A., Swapp, D., Guger, C., Barker, C., Pistrang, N. and Sanchez-Vives, M.V. (2006),A virtual reprise of the Stanley Milgram obedience experiments. *PLoS ONE*, 1(1), 1–10.
- Smith, M.D. et al., (2000). Understanding Digital Markets: Review and Assessment. In E. Brynjolfsson and B. Kahin (Eds.), *Understanding the Digital Economy: Data, Tools, and Research*, 99-136. MIT Press.
- Sternthal, L.W. et al., (1978). The Persuasive Effect of Source Credibility: Tests of Cognitive Response. *The Journal of Consumer Research*, 4.
- Suri, S. and Watts, D.J. (2011). Co-operation and contagion in Web-Based, networked public goods experiments. *PLoS ONE*, 6(3), 3–8.
- The Pew Internet & American Life Project, 1999. The Pew Internet & American Life Project, (2000), <<http://www.pewinternet.org>>
- Wakefield, R. (2001). A determination of the antecedents of online trust and an evaluation of current Web assurance seals. Doctoral dissertation, University of Mississippi, University, MS.
- Wiersma, W. (n.d.), From web-forms to virtual worlds: Opportunities and Challenges posed by Four Types of Online Experiment. http://wybowiersma.net/pub/essays/Wiersma,Wybo,From_web-forms_to_virtual_worlds.pdf [retrieved 30 June 2014].
- Williamson, O.E. (1991). Calculativeness, Trust, and Economic Organization. *Journal of Law and Economics*, 26,453-486, 1991.
- Woolse, R. (1997). Building high trust organizations. 58 (9), 12, 4p, 1 chart, 1bw, Business Source Premier.
- Zajonc, R.B. (1980). Feeling and thinking. *American Psychologist*, 35 (2), 151-175.
- Zucker, L.G. (1986). Production of trust: institutional sources of economic structure. In B.M. Staw and L.L. Cummings (eds), *Research in Organisational Behaviour*, Greenwich, CT: JAI Press, 53-112.
- Zajonc, R.B. (Feb 1980). Feeling and thinking. *American Psychologist*, 35 (2), 151-175.
- Zucker, L.G. (1986). “Production of trust: institutional sources of economic structure”. in B.M. Staw and L.L. Cummings (eds), *Research in Organisational Behaviour*, Greenwich, CT: JAI Press, pp. 53-112.

Green Human Resource Management Models: Review and Proposal

Mamin Ullah*

Abstract

The objective of this study is to review the existing research models of green human resource management (Green HRM) and then conclude the paper with a comprehensive research model for future study. This methodological aspect of this study is qualitative and accordingly the study is carried out based on the archival method. The key components of the existing research models were identified and discussed. The study is supposed to contribute to the existing field of research as this is the first kind of research in this field. Research gaps and policy implications are identified.

Keywords: Green human resource management, GHRM, research models, green management.

Introduction

Businesses are often coerced by industrial or federal regulations to employ clean technologies or environmentally-friendly production processes to create 'green' products (Özen & Küskü 2009). To become a green business an organization should carry out and produce not only green processes and products, but also green human resources (HR) practices. However, while there are an increasing number of green technology adoptions green HR initiatives are rare (Millard 2011).

Business organizations are under increasing pressure to implement green initiatives, which are an important aspect of corporate social responsibility (Jabbour & Santos, 2008). Therefore, effective engagement in green initiatives has

become an organizational obligation and an important source of organizational competitive advantage (Porter & Kramer, 2011).

Effectively managing a firm's human resources (HR) plays an important role in the successful implementation of organizational strategies through developing positive employee workplace attitudes and behaviors (Guest, 2011). It has been suggested in the literature that organizations should adopt effective green human resource management (green HRM) to promote and elicit employee green behavior with the aim of achieving organizational green goals (Jackson and Seo, 2010).

In the past two decades, a worldwide consensus has emerged around the need for proactive environmental management (González-Benito and González-Benito, 2006). Building upon this green concept numerous literatures on Green marketing (Peattie, 1992), Green accounting (Bebbington, 2001; Owen, 1992), Green retailing (Kee-hung et al., 2010), and Green management in general (McDonagh & Prothero, 1997) have impregnated the field of management. Moreover, the active participation of corporate sector in adoption of environment management strategies (Boiral, 2002; González-Benito & González-Benito, 2006), made way for green management prospective.

Though a substantial extent of existing literature deals with the topic of Green HRM, there is still ambiguity associated with the effective implementation of green HR management policies in organizations round the globe to attain absolute green corporate culture (Ahmad, 2015). Again, although there are a number of research models

* Assistant Professor, Department of Management Studies, University of Barisal, Bangladesh
mamin_83@hotmail.com

of green HRM available, the extensive and concrete research model is still absent in this field. This study aims at reviewing the existing research models and literature of green HRM and then proposes a comprehensive research model for future study. Thus the study is carried out in five steps. First, relevant models and literature were collected. Second, the collected models and literature were scrutinized based on the objectives of the study. Third, the securitized models were reviewed. Fourth, we proposed a comprehensive a research model based on the analysis of existing research models and literature. Finally, research gaps were identified.

Objectives

The main objective of this study is to review the existing research models of green human resource management and then propose a comprehensive research model for future study. However, the study also analyzes the existing literature of green human resource management and sets the fields for future research by identifying the research gaps.

Rationale of the Study

There is a growing and strong debate among the HR practitioners regarding the term 'Green HRM'. Organizations are now placing importance on the integration of environmental sustainability into their HR strategies.

Accordingly a growing number of studies are being conducted to justify the viability as well as the applicability of Green HRM. This study attempts to analyze the existing models of Green HRM. Thus this study is supposed to contribute to the field of Green HRM literature. First, the study will help the HR professionals in adopting and implementing Green HR strategies. Second, it will help the unions and employees to adopt Green HRM policies and practices that help safeguard and enhance worker health and well-being. Third, the study is supposed to open the doors of future research as a comprehensive research model is presented in the paper. Fourth, it will help the academics by revealing additional data to the existing literature. Finally, this study will help the HR professionals in adopting and implementing a suitable Green HRM model.

Methodology

This study aims at reviewing the existing models of Green HRM. Thus this is a qualitative research

based on the extensive analysis of existing models and literature of Green HRM. Literature review is adopted as it enables to structure research and to build a reliable knowledge base in this field (Tranfield et al., 2003). In order to achieve the stated review objective, a systematic review of literature was conducted by using an archival method. This paper employs a methodology to review the articles cited in the databases like Sage, Taylor and Francis Online, Springerlink, ScienceDirect, JSTOR, Wiley Online Library, and Emerald. The other sources of data include books, journals, e-papers and websites. Contemporary research papers were given priority in analyzing the existing literatures. Research papers and models were delimited from the review if they did not have a focus on environmental management as it pertains to management, employees, work organisations, and the wider social arena. A systematic review of collected literature was done in detail.

Literature Review

The Green HRM literature is largely a western one and, given the importance of Asian economic development for environmental management, this is an important gap for future studies to reduce (Renwick, Redman, & Maguire, 2013, p. 3). Fayyazia et al. (2015) said that there is a requirement for the amalgamation of environmental management in Human Resource Management (HRM) because it is essentially or very important rather than just desirable. Successful environmental management in an organization needs special efforts of human resource management (Rothenberg, 2003).

Similarly Jabbour and Santos (2008) also stated that effective environmental performance results need human resource practices that support the whole execution and preservation of environmental management systems in the organisations. The extant literature in the HR field on the topic of sustainability suggests that more and more HR executives are keen to modulate their corporation as such to become exclusive environmental champions.

Opatha & Arulrajah, (2014) idewnified some studies that focus on the linkage between HRM functions and environmental management. See table 1.

A great extent of empirical research highlights the impact of environment management practices on performance of the organization using different parameters (Iraldo, Testa, & Frey, 2009; Yang et al., 2010). Literature has given importance to

Table 1: Research Linking Specific HRM Functions and Environmental Management

Author	Specific HRM function	Finding
Wehrmeyer (1996)	Recruitment	Recruitment practices can support effective environment management by ensuring that new recruits understand an organization's environmental culture and share its environmental values.
Stringer (2009)	Recruitment	Graduates and other job applicants pay attention to the environmental management practices and performance of companies and use such information when deciding where to apply.
Phillips (2007)	Recruitment	Increasingly, firms are beginning to recognize that gaining a reputation as a Green employer is an effective way to attract new talent.
Ramus (2002)	Training	Environmental training and establishing a culture in which employees feel they are accountable for environmental outcomes were the most salient HRM practices for achieving environmental goals.
Milliman and Clair (1996)	Incentives management	Tying incentive pay to the attainment of environmental goals helps focus managers' attention and invigorate efforts aimed at achieving them.
Ramus (2002)	Incentives management	Recognitions and financial incentives can be effective in motivating employees to generate eco-initiatives.

Source: (Opatha & Arulrajah, 2014)

adoption of environmental practices to identify the human resource management practices (Cherian & Jacob, 2012).

Serafin) Bäßler (2010) highlighted the some environmental management models along with the references of supporting studies. See Table 2.

Table 2: Overview of Environmental Management Models

Publication, Model	Context	Method	According Type Risk Mitigation	According Type Entrepreneurial
Petulla (1987)	Approaches to EM	Empirical	Crisis /Cost oriented	Enlightened EM
Hofstra et al. (1990)	Stages of completion of EM	Empirical	Inspection, [...] [...],	total integration
UNCTAD (1993)	Management approaches	Empirical (reactive), [...]	Compliance oriented development	Sustainable
Elkington (1994)	Stages of response to environmental problems	Empirical	Ignorance, awakening denial, guilt Reduction, [...]	Integration
Crosbie & Knight (1995)	Strategic option for management	Conceptual	Do nothing, defensive posture, [...]	Sustainable business
Hart (1997)	Environmental Strategies	Conceptual	Pollution prevention, [...]	Clean Technology
Ehrenfeld (1998)	Environmental Strategies	Conceptual	Business as usual, compliance, [...]	Sustainability
Winn & Angel (2000)	Corporate greening	Empirical	Reactive greening	Proactive greening
Rosen (2001)	Environmental strategy	Conceptual	Compliance driven	Strategic environment management
Van Marrewijk et al. (2004)	Framework for corporate sustainability and responsibility	Conceptual	Compliance driven	Entrepreneurial driven
Dunphy, Griffiths and Benn (2007)	Environmental strategies	Conceptual	Compliance corporation	Sustainable corporation
Pedersen (2010)	Corporate environmental and social strategies	Empirical	Reactive – compliance Driven and risk avoidance	Proactive – make a difference

Source: Bäßler, S. (2010)

Various contemporary scholars have augmented the understanding and studies on Green HRM in recent years (Berrone & Gomez-Mejia, 2009; Jabbour, Santos, & Nagano, 2010; Massoud, Daily, & Bishop, 2008; Renwick et al., 2008; Stringer, 2009). Green HRM depends on the unique and identifiable patterns of green decisions and behaviors of HR managers (Jackson et al., 2011). The incorporation of environmental objectives and strategies into the overall strategic development goals of a company helps in arriving at an effective EMS (Haden et al., 2009). There are various researchers who support the HRM practices to be effective for promotion of human capital and results in providing to contributors of organizational performance and competitive advantage (Boselie, Paauwe, & Jansen, 2001).

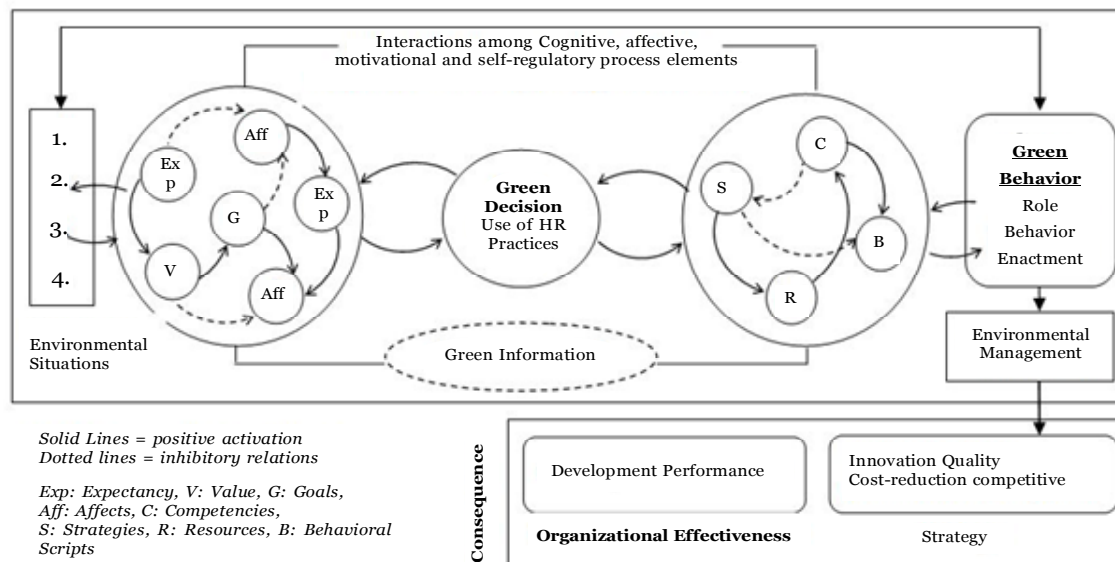
Contemporary Research Models of Green HRM

A proposed research model of a research paper is always a subject-matter of interest and further

research. This generally articulates the macro-scenario of the subject. Since green HRM is relatively a new phenomenon in the research field, it is quite logical and interesting to review the existing proposed research models. Although this is a challenging task, we provide an extensive endeavor to conduct this study. In the following sections, we analyze the fifteen selected proposed research models of green HRM with their special features and propositions in short.

Model 1

This is the most comprehensive and elaborative research model of Green HRM so far. In this model, Zoogah (2011) stated that green decisions of HR practices are the outcomes of environmental situations and green behavior. These decisions lead to the adoption of suitable business strategies that result in organizational effectiveness. Zoogah (2011) also identified the active and inhibitory relations among the variables.

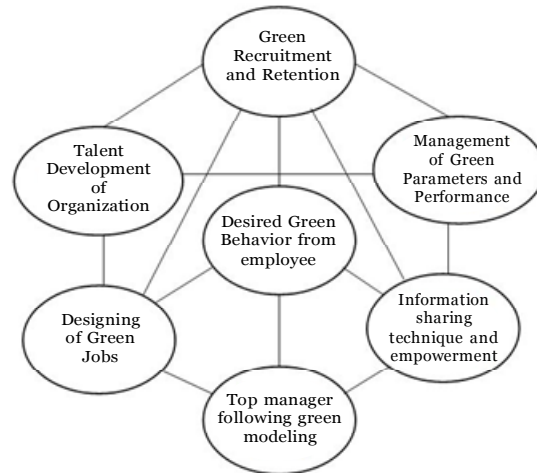


Source: Zoogah, B. D. (2011).

Model 2

In the following model, Sharma & Gupta (2015) showed the relations of HRM functions and

employee's green behavior. The essence of this model is that every function of green HRM has an effect on employee's green behavior.

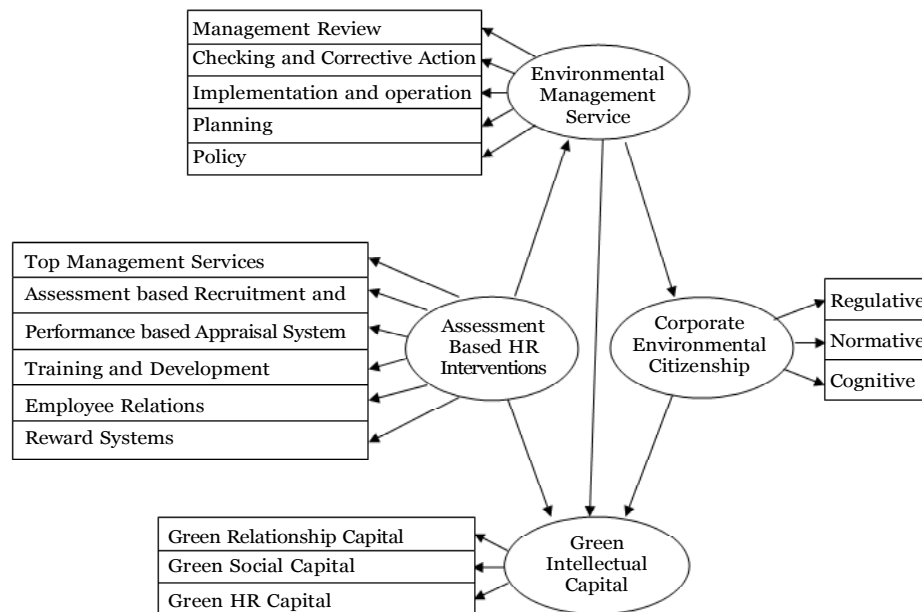


Source: Sharma & Gupta (2015)

Model 3

This is another comprehensive model of Green HRM developed by Sudin in 2011. In this model, Sudin (2011) highlighted that environmental management service has an effect on green

intellectual capital. Both the green HR functions and environmental management services lead to corporate environmental citizenship. This environmental citizenship can be classified into three types: regulative, normative and cognitive.

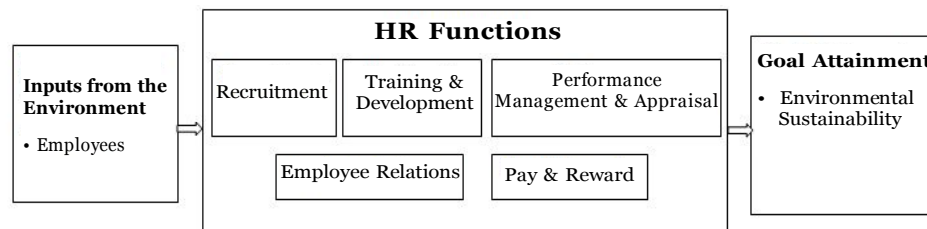


Source: (Sharma & Gupta, 2015)

Model 4

In this model, Uddin & Islam (2016) stated that environmental inputs make an employee as a green

employee that helps him/her to carry out the HR functions effectively. This helps a firm attainment the desired goals.

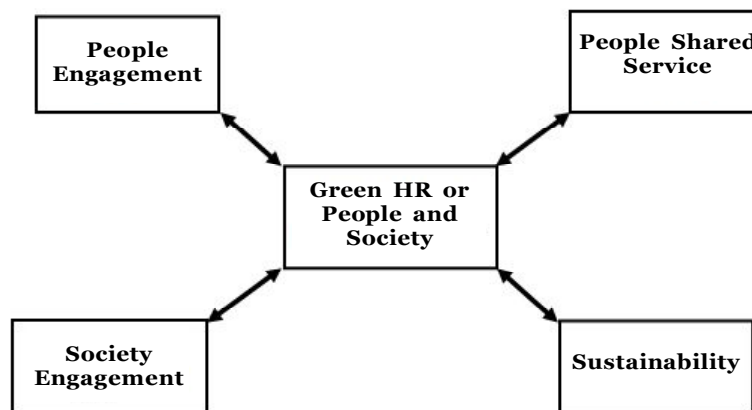


Source: (Uddin & Islam, 2016)

Model 5

This model was developed by Mandip in 2012. Here, Mandip (2012) stated that green HR is the

collective result of people engagement as well as society engagement. People's shared service and sustainability are also critical here. All these actors affect each other.

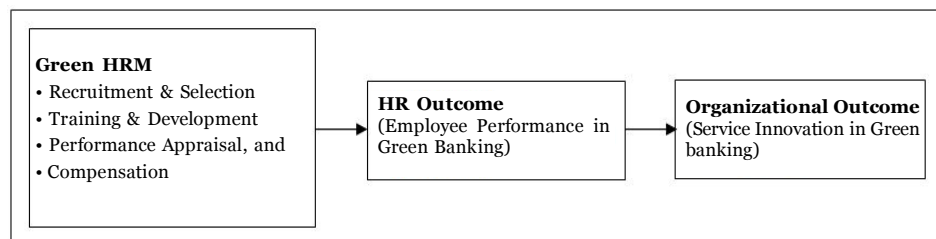


Source: (Mandip, 2012)

Model 6

In the following model, Rimi (2016) stated that Green HR functions lead to the green employee performance that ultimately results in service

invocation. Here she wanted to show that there is a relationship between green HRM and organizational outcome.

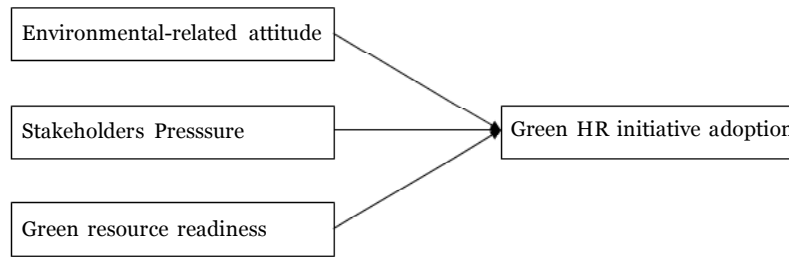


Source: Rimi, N. N. (2016)

Model 7

In this model, Sawang and Kivits (2014) highlighted that a green HR initiative adoption policy is affected by three factors. These factors are

environmental-related attitude, stakeholders' pressure and green resource readiness. So the HR manager should consider these factors in adopting green HR policy.

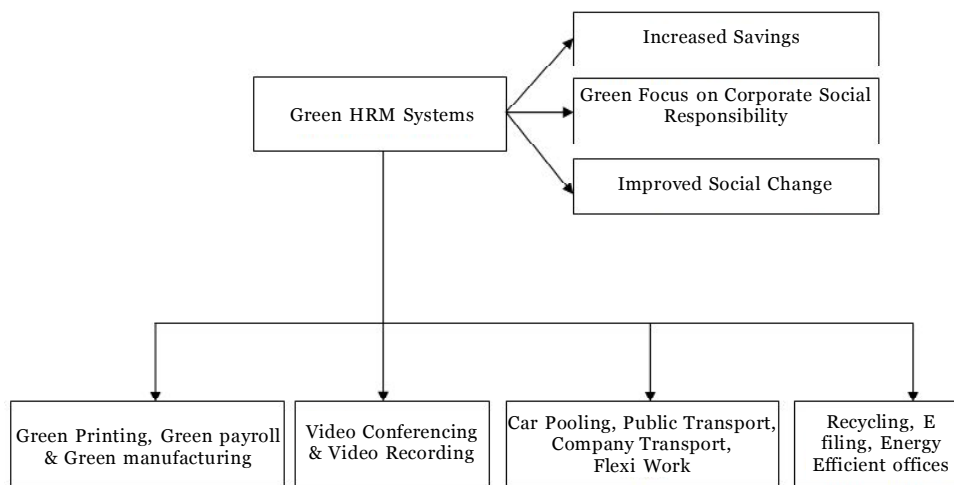


Source: Sawang, S., & Kivits, R.A. (2014)

Model 8

Verma (2015) proposed this research model in 2015. According to this model, Green HRM Systems

produce certain positive outcomes like increased savings, special focus on CSR, and improved social change. Verma (2015) also provided some examples of green HRM practices in this model.

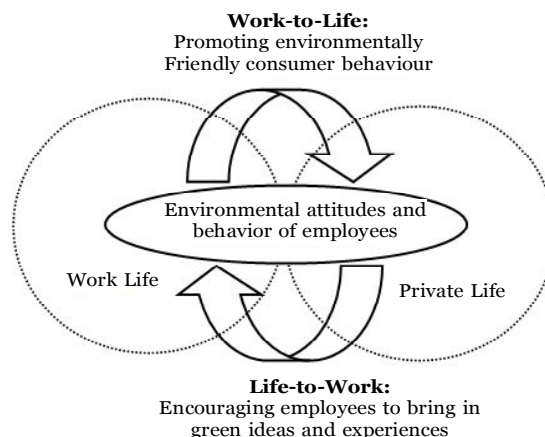


Source: Verma, R. (2015)

Model 9

In the following model, Schrader and Muster (2011) stated that employees learn different kinds of behavior not exclusively at the workplace, but also in private life. According to this model, there are

reciprocal interactions between working life and private life occurs what they termed as a “green work-life balance concept”. The concept offers chances not only for the environment, but also for the company and its employees by increasing, for example, work motivation and job retention.

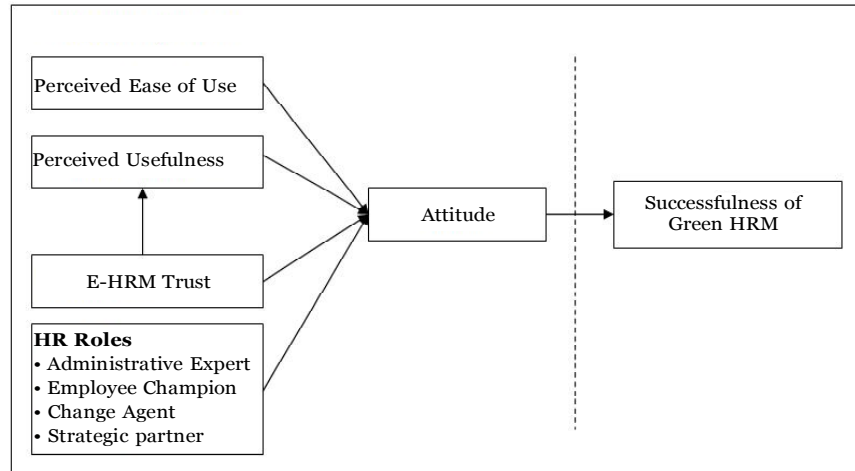


Source: Schrader, U. & Muster, V. (2011)

Model 10

Yusoff et al. (2015) worked on the relationship between e-HRM and green HRM. According to this model, there are some assessments of e-HRM.

These assessments along with the HR roles make up the employee attitude towards green HRM which is critical for the successful implementation of green HRM policies.

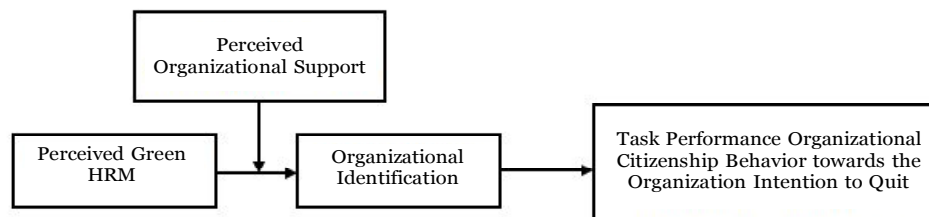


Source: Yusoff et al. (2015)

Model 11

In the following model, Shen et al. (2016) showed an inter-relationship between perceived organizational support and perceived green HRM.

Both these organizational support and perceived green HRM constitutes the organizational identification that ultimately contributes to the task performance and organizational citizenship behavior.

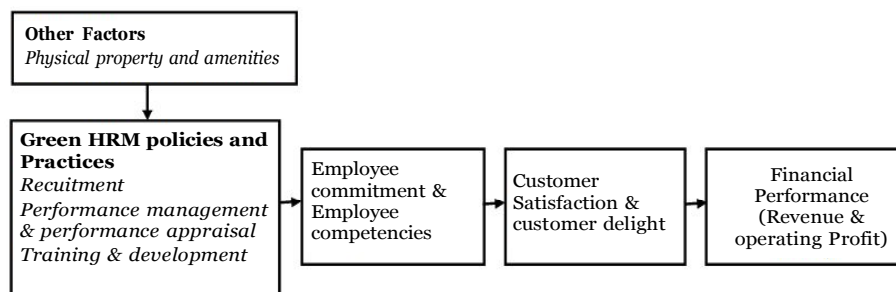


Source: Shen et al. (2016)

Model 12

Haynes and Fryer proposed the following model in 2000. This model suggests that green HRM policies and other factors like physical property

determine the employee commitment and employee competence. Employee commitment and employee competence lead to customer satisfaction which ultimately results in increased financial performance.

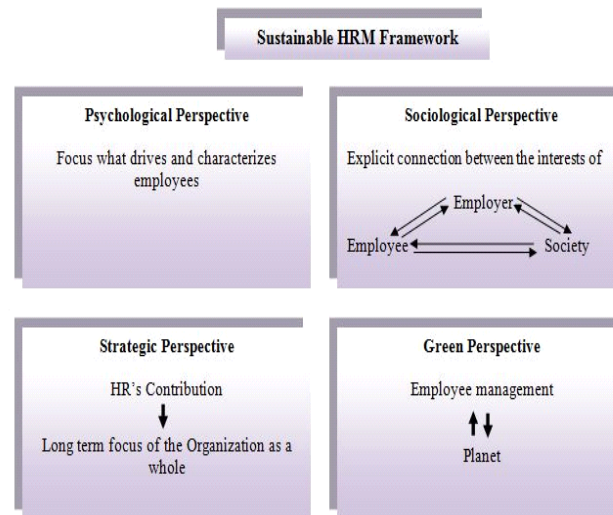


Sources: Haynes, P & Fryer, G. (2000).

Model 13

In the following model, De Prins (2011) showed that sustainable HRM framework is composed of four perspectives. These perspectives are psychological perspective, sociological perspective, strategic perspective, and green perspective. De

Prins (2011) argues Sustainable HRM focuses on optimally utilizing and respecting human workforces within the organization, in which an explicit relationship is built between an organization's strategic policies and its environment.



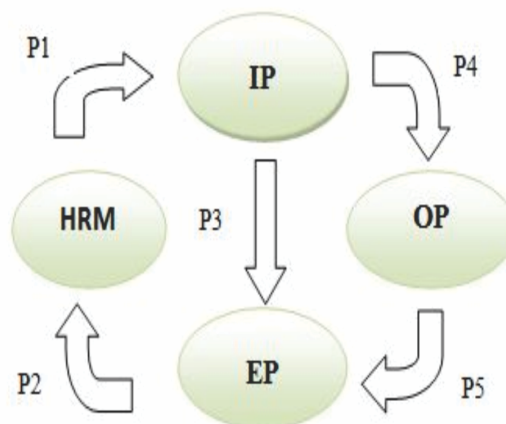
Source: De Prins (2011).

Model 14

Wong et al. (2013) proposed the following model by highlighting the relationship among human resource management, organizational performance, environmental performance, and innovation performance. According to Wong et al. (2013),

innovation performance leads to environmental performance which results in the effectiveness of green HRM functions.

Here, OP = Organizational Performance, EP = Environmental Performance, IP = Innovation Performance

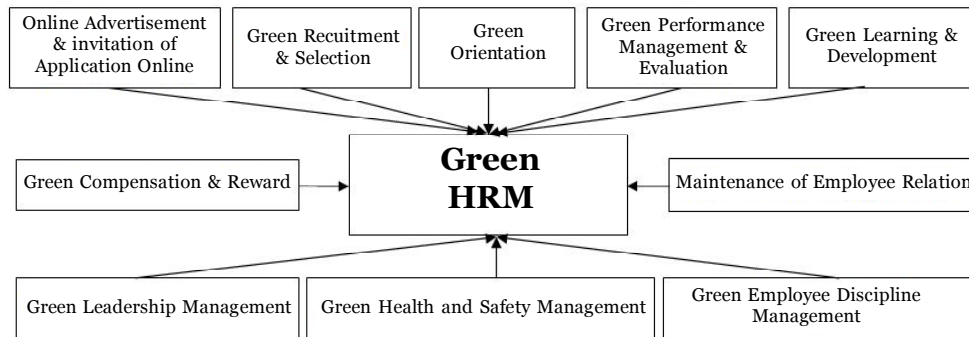


Source: Wong et al. (2013)

Model 15

The following model was proposed by Hosain and Rahman in 2016. This model basically highlights the functions of green HRM. In this model, Hosain

and Rahman (2016) identified ten specific wings of green HRM that collectively contribute to the successful adoption and implementation of green HRM policies.



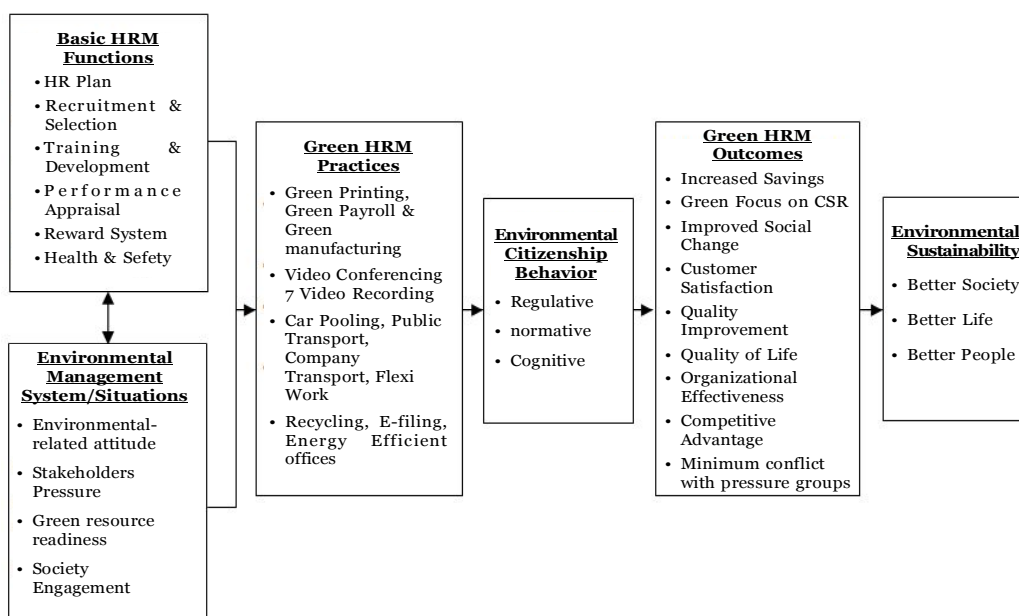
Source: (Hosain & Rahman, 2016)

Proposed Research Model

Although the field of green HRM is comparatively new and is at the infant stage, there are a number of models added to the literature. However, there is no comprehensive research model on green HRM still now. Majority of the models deal with the nature of the green HRM. Based on the analysis of the existing research models and literature, we can propose the following comprehensive research model.

In the proposed research model, we highlight that

the basic HRM functions and environmental management are affected by each other in the organizational context. Both the HRM functions and environmental systems constitute the green HRM practices. The level of green HRM practices defines the environmental citizenship behavior. This environmental citizenship behavior is critical for the green HRM outcomes like increased savings, quality of life, customer satisfaction, improved social change, and so on. The final output of these green HRM policies and practices is the environmental sustainability.



Source: Author

Conclusion

There is an inherent capacity of HRM functions in greening employees and organizational operations. From job design function to employee relations, HRM has gigantic potential in greening organization and its operations. The key challenge in front of HR professionals is to understand the scope and depth of green HRM in transforming their organizations as green entities. This effort ultimately leads to better environmental performance of the organization. Green HRM is new phenomenon in the field of HRM. It creates some new challenges for HR professionals. The study tried to explore the concepts, processes, requirements and challenges of Green HRM identified in the existing models and literature. The study found that Green HR can adopt various green processes and practices in different HR functions like HR planning, acquisition of human capital, their induction, training, performance management, reward management and better industrial relations which will have a bearing on the overall achievement of the organization's goals.

It was found that distinct HR policies, top management commitment, teamwork, empowerment, positive management behavior and transparent merit systems are associated with the successful implementation of Green HR strategies. HR professionals face a number of challenges regarding Green HRM. However it is clear from the study that the HR Professionals must address the environmental needs in crafting HR strategies and implementing the HR policies and practices in alignment with environment management. This study is concluded with a comprehensive research model of green human resource management. Thus this study is supposed to help the researcher to identify the areas of Green HRM that are yet to be researched.

Research Gap and Scope for Future Study

This study was conducted based on the extensive analysis of existing models and literature of Green HRM. The authors have tried to organize the concepts, process, requirements and challenges of Green HRM in a constructive manner so that it can help the interested readers, researchers and academicians. However Green HRM is an emerging philosophy. Indeed, there are many gaps to be filled in respect of green HRM. Such gaps include an informative guide on the emergent literature, its scope and coverage, and a process model and research agenda in this field.

Theoretical and empirical studies are needed to enhance the body of knowledge of Green HRM. The interested contributors/researchers can do extensive quantitative and/or qualitative research on Green HRM. More importantly, the researchers and academics area highly welcome to do the extensive research and/or validate the research model as proposed in this paper.

References

- Ahmad, S. (2015). Green Human Resource Management: Policies and practices. *Cogent Business & Management*, 2, 1-13.
- Babler, S. (2010). *Human Resource Management and Environmental Sustainability: Lessons Learned from Swiss Companies*. Unpublished Master Thesis. University of Zurich. Retrieved on April 10, 2017 from www.hrm.uzh.ch/static/fdb/uploads/ma_serafin_baebler.pdf
- Bebbington, J. (2001). Sustainable development: A review of the international development, business and accounting literature. *Accounting Forum*, 25, 128-157.
- Berrone, P., & Gomez-Mejia, L. R. (2009). Environmental performance and executive compensation: An integrated agency-institutional perspective. *Academy of Management Journal*, 52, 103-126.
- Boiral, O. (2002). Tacit knowledge and environmental management. *Long Range Planning*, 35, 291-317.
- Boselie, P., Paauwe, J., & Jansen, P. G. W. (2001). Human resource management and performance: Lessons from the Netherlands. *The International Journal of Human Resource Management*, 12, 1107-1125.
- Cherian, J., & Jacob, J. (2012). A study of Green HR practices and its effective implementation in the organization: A review. *International Journal of Business and Management*, 7, 25-33.
- De Prins, P. (2011). *Duurzaam HRM: Synthetische academische introductie*. Retrieved on April 10, 2017 from http://www.innovatiefinwerk.nl/sites/innovatiefinwerk.nl/files/field/bijlage/sustainable_hrm.pdf
- Fayyazia, M., Shahbazmoradib, S., Afsharc, Z., & Shahbazmoradic, M.R. (2015). Investigating the barriers of the green human resource management implementation in oil industry. *Management Science Letters*, 5, 101-108.
- González-Benito, J., & González-Benito, O. (2006). A review of determinant factors of environmental proactivity. *Business Strategy and the Environment*, 15, 87-102.
- Guest, D. E. (2011). Human resource management and performance: Still searching for some answers. *Human Resource Management Journal*, 21, 3-13.
- Haden, S. S. P., Oyler, J. D., & Humphrey, J. H. (2009). Historical, practical, and theoretical perspectives on green management. An exploratory analysis. *Management Decision*, 47(7), 1041-1055.

- Haynes, P., & Fryer, G. (2000). Human resources, service quality and performance: a case study. *International Journal of Contemporary Hospitality Management*, 12 (4), 240 – 248.
- Hosain, M. D., & Rahman, M. D. (2016). Green Human Resource Management: A Theoretical Overview. *IOSR Journal of Business and Management (IOSR-JBM)*, 18(6), 1-7.
- Iraldo, F., Testa, F., & Frey, M. (2009). Is an environmental management system able to influence environmental and competitive performance? The case of the eco-management and audit scheme (EMAS) in the European Union. *Journal of Cleaner Production*, 17, 1444-1452.
- Jabbour, C. J. C., & Santos, A. C. F. (2008). Relationships between human resource dimensions and environmental management in companies: proposal of a model. *Journal of Cleaner Production*, 16, 51-58.
- Jabbour, C. J. C., Santos, F. C. A., Nagano, M. S. (2010). Contributions of HRM throughout the stages of environmental management: methodological triangulation applied to companies in Brazil. *International Journal of Human Resource Management*, 21(7), 1049-1089.
- Jackson, S. E., & Seo, J. (2010). The greening of strategic HRM scholarship. *Organization Management Journal*, 7, 278-290.
- Jackson, S., Renwick, D., Jabbour, C. J. C., & Muller-Camen, M. (2011). State-of-the-Art and Future Directions for Green Human Resource Management Zeitschrift für Personal for schung. *German Journal of Research in Human Resource Management*, 25, 99-116.
- Kee-hung, L., Cheng, T., & Tang, A. (2010). Green retailing: Factors for success. *California Management Review*, 52, 6–31.
- McDonagh, P., & Prothero, A. (1997). *Green management: A reader*. London: Dryden Press.
- Mandip, G. (2012). Green HRM: People management commitment to environmental sustainability. *Research Journal of Recent Sciences*, 1, 244-252.
- Massoud, J. A., Daily, B. F., & Bishop, J. W. (2008). Reward for environmental performance: Using the Scanlon Plan as catalyst to green organisations. *International Journal of Environment, Workplace and Employment*, 4, 15–31.
- Mazur, B. (2015). Sustainable human resource management. The attempt of holistic approach. *Economics and Management*, 7(2), 7-12.
- Opatha, H.H.D.N.P., & Arunrajah, A. Anton, & Nawaratne, N.N.J. (2014), Green Human Resource Management Practices: A Review. *Sri Lankan Journal of Human Resource Management*, 5(1), 1-16.
- Owen, D. (1992). *Green reporting: Accountancy and the challenge of the nineties*. London: Chapman Hall.
- Peattie, K. (1992). *Green Marketing*. London: Pitman.
- Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review*, 89, 62-77.
- Renwick, D., Redman, T. & Maquire, S. (2008). *Green HRM: A Review, Process Model, and Research Agenda*. Discussion Paper Series, University of Sheffield Management School, The University of Sheffield.
- Rothenberg, S. (2003). Knowledge content and worker participation in environmental management at NUMMI. *Journal of Management Studies*, 40, 1783-1802.
- Sayed, S. (2016). Green Hrm-A Tool of Sustainable Development. *Indian Journal of Applied Research*, 5(6). Retrieved from <https://worldwidejournals.in/ojs/index.php/ijar/article/view/8652>
- Schrader, U., & Muster, V. (2011). Green work-life balance: A new perspective for green HRM. *German Journal of Research in Human Resource Management*, 25(2), 140-156.
- Sharma, R., & Gupta, N. (2015). *Green HRM: An Innovative Approach to Environmental Sustainability*. In Proceeding of the Twelfth AIMS International Conference on Management. 2–5 January, Calicut, India (pp. 825–830).
- Shen, J., Dumont, J., & Deng, X. (2016). Employees' Perceptions of Green HRM and Non-Green Employee Work Outcomes: The Social Identity and Stakeholder Perspectives. *Group & Organization Management*, doi: 10.1177/1059601116664610.
- Stringer, L. (2009). *The Green workplace. Sustainable strategies that benefit employees, the environment, and the bottom line*. New York, NY: Macmillan.
- Sudin, S. (2011). Strategic Green HRM: A proposed model that supports corporate environmental citizenship. *IPEDR*, 10, 79–83.
- Tranfield, D., Denyer, D., Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207-222.
- Uddin, M. M., & Islam, R. (2016). Green HRM: Goal Attainment through Environmental Sustainability. *Journal of Nepalese Business Studies*, 9(1), 14–19.
- Wong, K.-L., Tan, P. S.-H., Ng, Y.-K., & Fong, C.-Y. (2013). The role of HRM in enhancing organizational performance. *Human Resource Management Research*, 3(1), 11–15.
- Yang, C., Lin, S., Chan, Y., & Sheu, C. (2010). Mediated effect of environmental management on manufacturing competitiveness: An empirical study. *International Journal of Production Economics*, 123, 210–220.
- Yusoff, Y. M., Ramayah, T., & Othman, N.-Z. (2015). Why Examining Adoption Factors, HR Role and Attitude towards Using E-HRM is the Start-Off in Determining the Successfulness of Green HRM? *Journal of Advanced Management Science*, 3(4), 337–343.
- Zoogah, D. (2011). The dynamics of Green HRM behaviors: A cognitive social information processing approach. *Zeitschrift fur Personalforschung*, 25, 117–139.

Effects of Online Buyer Characteristics on e-Service Quality

Adil Rasool* & P. Rajmohan**

Abstract

In addition to customer perception and expectation, e-service quality take account of all possible communication stages connecting customer and e-Service providers' website. Keeping this in view, present study was conducted and data were collected from 703 online buyers from three states of India following the guidelines of diffusion of Innovation theory (Rogers, 1983). The result of the present study reveals that Perceived overall Service Quality depends on group of factors such as Propensity of Online Buying, Actual Online Buying, Understanding levels of e-Shopping, Perceived Security on e-Payment, Preference for Physical Payment and Intensity of Internet Usage among Online Buyers. More specifically, Understanding levels of e-Shopping among Online Buyers in e-Retailing is found to be having significant superior effect on Perceived overall Service Quality. Similarly, Perceived Security on e-Payment among Online Buyers in e-Retailing cause's significant good effect on Perceived overall Service Quality in e-Retailing. However, Actual Online Buying, Preference for Physical Payment and Intensity of Internet Usage are not found to be significant.

Keywords: E-Service Quality, Online Buying, Service Quality and Online Buyer characteristics.

Introduction

Service Quality

Service Quality is the result of customer perception and customer expectation; expectation towards

service they use and perception about service provider (Gronroos, 1984). Service Quality can be understood as the methods of handling the customer during the service delivery; it comes out by the repeated experiences through communication between customers and retailers. While getting the service from the retailers, customers can easily distinguish among past and present quality level of service offered by the retailers and rate the Service Quality accordingly (Seth et al., 2005).

E-Service Quality

E-Service Quality includes all communication levels between customer and e-Service providers' website and the resultant operations initiated due to such communications (Batagan et al., 2009). Thus, the aspects related to the delivery of the services through appropriate physical or virtual medium is a major consideration in estimating the Quality levels of e-Services (Zeithaml et al., 1988). Different forms of services provide different options to e-Service providers on delivering the process attribute of such services to the customers and it is that attribute that decides the suitability of the medium to deliver such services (Behjati et al., 2012). A few studies have established reliable parameters separating service from goods on the basis of intangibility, heterogeneity, perishability, inseparability of production and consumption (Zeithaml and Bitner, 2003; Lovelock and Gummesson, 2004). Accordingly, some of the popular delivery channels adopted by different e-Service providers include e-channels, physical delivery through logistics and point of service

* Assistant Professor, Ph.D, SPMR College of Commerce, Jammu, rasool.adil@gmail.com

** Assistant. Professor, Ph.D, Department of Business Administration, Annamalai University, Tamil Nadu
rajmohan_pps@yahoo.com

consumption. However, the choice of this service delivery method is purely driven by the nature of the services dealt and hence, it varies from one form of e-Service providers with others (Chang and Wang, 2008). Hence, estimating Service Quality levels of e-Service offered is a complex procedure that needs full understanding of the nature and attributes constituting the service in addition to understanding the quality levels of communication between customer and e-Service providers' website.

Online Buyer Characteristics in e-Retailing

Buyer characteristics can be understood as the personal characteristics of the buyers that can influence the actual buying decision (Aramstrong, 2015). Some of the potentials factors affecting the buyer characteristics include cultural factors, social factors, demographic factors and psychological factors. The potential Online Buyer characteristics that are found to be influencing buyer participation in e-Retailing include Intensity of Online Buying, Intensity of Internet usage, Online Payment Concerns and Understanding levels of e-Shopping (Rajmohan and Sayel, 2011). While Online Buyers have the distinctive ability to extract the advantages offered in e-Retailing, the characteristic identified varies significantly among them. The varied level of understanding on e-Shopping causes limitations in exploiting the fullest advantages of e-Retailing (Keisidou et al., 2011). Similarly, the Online Payment concerns causes variations in the Perceived Security on e-Payment systems which in turn affects the online purchasing intentions very often. Further, varied intensity levels in Internet surfing which is a fundamental skill needed on the part of the Online Buyers gives scope for variations in exploiting the fullest advantages of e-Retailing features (Luo and Zhang, 2012). Also, Online Buyers will have natural variations in the Intensity levels of Online Buying due to various reasons. For instance, varying needs, economic factors, demographic factors and Service Quality levels of e-Retailers could be some of the potential reasons contributing towards these variations. The details of the aspects constituting these Online Buyer characteristics as follows;

1) Intensity of Online Buying

Intensity of Online Buying represents the actual volume of Online Buying made by the Online Buyers in a specific period. Some of the key parameters determining the intensity levels of Online Buying

include the quantum of money spent and the actual number of online purchases over a period, number of online shops dealt by the Online Buyers over a period and the possibilities of initiating online purchase in future.

2) Intensity of Internet Usage

Intensity of Internet usage represents the actual time spent by the Online Buyers in accessing Internet for a specific period. Some of the key parameters determining this intensity levels include Internet usage experience, frequency of Internet usage and the actual time spent on accessing Internet in a day.

3) Online Payment Concerns

Online Payment concern is the inhibitions on the part of the Online Buyers to initiate e-Payment without the fear of security breach in the Internet mediated environment. Some of the popular e-Payment systems in India include credit card, debit card and net banking applications. Most of the e-Retailing enterprises in India are providing facilities to pay through COD (Cash on Delivery) options for the orders initiated through e-Retailing websites.

4) Understanding Level of e-Shopping

Understanding level of e-Shopping is the fluency levels of Online Buyers to initiate purchase through e-Retailing web site and pay for it in the Internet mediated environment. Some of the key parameters determining these understanding levels include hedonic experience in the website, ability to manage user account in the e-Retailing portal, knowing the procedure to redeem promotional codes; gift vouchers; loyalty points etc., ability to track the orders and knowing the product return procedure.

Literature Review

Many studies in the past have contributed significantly towards shaping the knowledge on the factors influencing Online Shopping. Some of the important factors identified by the previous studies include price, convenience, life content of the product, security, vendor quality, IT education, purchasing intentions, behavioral control, online buying experience, website design, fulfillment aspects, demographic factors, shopping orientation, brand equity, place of e-Retailing operations, warranties offered, customization, informative shopping experience, refund systems, auctioning

features, search engines, web appealing, satisfaction, loyalty and trust.

The theoretical and empirical framework for the study on consumer attitudes towards Internet-based e-shopping was found in the works of Liao and Cheung (2001). Through the survey data generated from Singapore, the above study measured the initial willingness of the consumers to do shopping in the Internet and reported that life content of the products, transaction security, price, vendor quality, IT education and Internet usage significantly affect the initial willingness of the Singaporeans to e-shop on the Internet. In the context of the above study, the availability of infrastructure facilitating e-Commerce with a minimum threshold size of the virtual market place is a prerequisite for the successful incorporation of B2C e-Commerce.

In predicting consumers' Internet purchasing intentions while searching the information about the product through Internet, Shim et al. (2001) conducted a study in 15 U.S metropolitan areas. The findings of the above study represents that intention to use the Internet to search for information is not only the strongest factor of Internet purchase intention but also plays a mediating role between purchasing intention and other factors such as attitude toward Internet shopping, perceived behavioral control and previous Internet purchase experience. Also, the finding shows that there is a both direct and indirect relationship between two antecedents namely attitude toward Internet shopping and previous Internet purchase experience with actual Internet purchase intention.

Towards finding out the factors affecting Online Buyers while shopping online, Shergill and Chen (2005) have identified factors such as website design, website reliability, fulfillment and website security/privacy playing major role in online buying intentions. The results of the above study mention that all the four factors are found to influence the consumer perceptions on the basis of the categorization made on Online Buyers. While classifying the Online Buyers in terms of trial, occasional, frequent and regular online buying behavior, the above study observes that different categories have varied levels of reactions on some of the factors identified. For instance, variations could be noted on the aspects of website design, website reliability and fulfillment and no such variations are found in the aspects of security and privacy issues in e-Retailing among the classified Online Buyers.

Towards identifying the consumer factors causing the effects on the Online Shopping acceptance, Zhou et al. (2007) have reported the effects of demographic factors, shopping orientation, Internet experience and perceived risk both from the perspective of online and physical shopping. While reporting the insignificant effects of demographic factor and shopping orientations, the findings of the above study reports the significant role of Internet experience and perceived risk in online shopping acceptance.

In order to investigate the role of extrinsic cues towards risk taking during online purchase, Cheng et al. (2008) conducted a study and identified three exogenous factors such as e-Retailers brand equity, Place of e-Retailers presence and Warranties offered affecting risk taking behavior of Online Buyers. Also, the findings of the above study shows that these identified factors influence perceived e-Service Quality, which in turn influences purchase risk perceived by online customers.

In an attempt to probe the relationship between e-Retailing attributes, e-Satisfaction and e-Loyalty, Chung and Shin (2008) have conducted a study and identified five important factors such as shopping convenience, Product selection, informative shopping experience, price and customization of e-Retailing contributing to the relationship conceived in the above study. Based on the data collected from 238 online customers, the study reveals that e-Satisfaction is affected by shopping convenience and informative shopping experience. While observing e-Loyalty getting affected by informative shopping experience, price and customization, the above study proves that e-Satisfaction is strongly influenced by e-Loyalty.

To investigate factors influencing Consumers' attitude towards shopping online, Akbar and James (2010) identified nine factors such as Price, Refund, Convenience, Auctioning, Security, Brand, Search engines, Promotion and Web appealing playing a major role while shopping online. The findings of the above study represent that all the above mentioned nine factors have positive significant effect among Internet users to accept online shopping. While price of the product sold is identified as the strongest influence on the willingness to shop online, the web appealing contribute insignificantly towards this willingness. Further, the above study observes significant variations between males and females on two of the 9 factors such as Auctioning features and Web appealing affecting the willingness to shop online.

Some of the suggestive remarks on the operations of e-Retailers towards enhancing customer service could be noted through the findings of the above study.

To know the factors that influence the attitude of customer towards e-Commerce through shopping online, Jusoh and Ling (2011) conducted a survey and collected data from 100 respondents in Saudi Arabia. The result of the above study shows that there is no significant difference in attitude towards online shopping among age group but attitude towards online shopping among income group shows significant difference. Also, it's mentioned that there is no significant difference in attitude towards online shopping among occupation group and types of product categories. A further finding of the above work relates experience of the Online Buyers, product perception and customer service with that of the positive attitude on Online Shopping. Some of the Online Buyer characteristics such as risk taking behavior and Intensity of Internet surfing is found to be with less significant effects on the Online Shopping behavior of Online Buyers.

In an effort to understand the willingness to buy online and intention to recommend, Yildirim and Cengel (2012) have conducted a study with reference to perceived risk and value of Online Buying. The findings of the above study reports the existence of relationship between willingness to buy online with that of lesser perceived levels of risk and higher levels of value. Similar such relationship could also be established in the above work for the factor intention to recommend. While willingness to buy was estimated on the basis of propensity to buy online, the intention to recommend was identified in the above study through the possibility of better word of mouth about e-Retailing among the Online Buyers.

In order to find out the motivating and demotivating factors that encourage or inhibit customer's to go for online buying, Prajapati and Thakor (2012) collected data from the respondents of Ahmadabad in India. The study result shows that Internet is the phenomenon gaining popularity among the people. Some of the potential reasons identified in the above study for customer of online shopping include the aspects of Convenience and time saving. Some of the motivational aspects stimulating customers to shop online found in the above study include Internet surfing, television advertisement of e-Retailing firms and word of mouth.

In an effort to understand the online shopping intentions, Rahman (2012) developed and tested a customer intention model in B2C context. The results of the above study show that online purchase intention depends on customers' attitude toward online shopping. The customer attitude is identified to be driven by factors such as trust, belief and perceived consequences in online environments. Further, the above study reveals the importance of controlling risk variables causing de-motivation in online purchases towards creating better buying intentions. Also, the findings of the above study reveal that the online customer's intention can make positive impact towards online buying behavior if there is social support, positive media role and family support.

The role of trust in e-Retailing is important towards its sustainability. In this regard, Dolatabadi and Ebrahimi (2010) have conducted a study in Iran and collected data from 625 customers to identify key factors influencing customers trust while purchasing through Internet. The result of the above study confirms that the perceived risks are found to play a major role while building the consumers trust during online shopping. It also represents that perceived security protection and perceived reputation are also found to improve the customer trust in Internet shopping. Further, the above study also identifies that individual characteristic such as propensity to trust occupies a moderating role while building relationship between trusts during Internet shopping and the Online Buyers' perceptions of the antecedents to trust.

In an attempt to explore the reasons on consumers buying product online, Keisidou et al. (2011) have conducted a study on consumer attitude towards e-Shopping on the basis of different product types. The findings of the above study report that IT knowledge, self efficacy, perceived security, privacy and product involvement are the major factors affecting the online purchasing intentions. However, these factors are reported to be causing varied levels of influence over the online purchasing intentions on the basis of product types such as books, e-tickets, electronic goods and subscriptions. The above study reports factors such as IT knowledge and product involvement affecting purchasing intention of books, whereas product involvement alone for e-tickets. While the purchase intentions of electronic goods are

reported to be affected by factors such as IT knowledge, perceived security and product involvement, the above study identifies factors such as IT knowledge, self efficacy and product involvement affecting online subscriptions.

Despite the availability of congenial environment and associated benefits for e-Commerce in Europe, 11 percent of the prospective online buyers have not used e-shops in Czech Republic. In this regard, Michal (2012) reports that 89 percent of customers use e-shops for buying products in the Czech Republic in which 32 percent of them are identified to be using Internet for regular purchases and 57 percent of them for irregularly purchases. Further, the above study observes that the customers who think rationally use on-line shopping because of money saving, speed delivery and the possibility of product comparison. The factors such as security and personal information are observed in the above study to cause significant influence on online consumer behavior in B2C and B2B markets.

To explore the factors that influence customer intention while purchasing products or service through Internet, Haq (2012) conducted an empirical study in India and identified four important dimensions such as website quality, commitment factor, customer service and security. Based on the results of the above study, healthy relationship has been established between consumers' perceptions of the factors that influence their intention to buy through e-Retailing. More specifically, consumers' perceptions of the customer service, commitment and web security of online purchasing contribute significant relationships with their online buying intention. Further the above study reveals that the perception of online shoppers is independent on their 'age and gender' but dependent on their 'education and gender' and 'income and gender'.

Aspects related to the perceived security of e-transactions could be noted in the works of Javadi et al. (2012) in terms financial risk and non-delivery risk among the Online Buyers in Iran. Based on the survey data generated among 200 Online Buyers, the above study proves the negative effects of perceived security of e-transactions towards the

intentions to shop online. While establishing the negative effects on the intentions to purchase, the positive influence for e-Shopping could be noted on aspects related to domain specific innovativeness and subjective norms. Some of the potential suggestions noted for e-Retailers in the above study include the considerations for reducing the negative effects and actions mediating the positive effects for enhancements in Online Buyer characteristics among the potential Online Buyers.

Methodology

Objectives and hypothesis

O₁: To identify effects of Online Buyer characteristics on Perceived overall Service Quality in e-Retailing.

H₁: Perceived overall Service Quality among Online Buyers in e-Retailing does not depend on Propensity of Online Buying, Actual Online Buying, Understanding levels of e-Shopping, Perceived Security on e-Payment, Preference for Physical payment and Intensity of Internet usage.

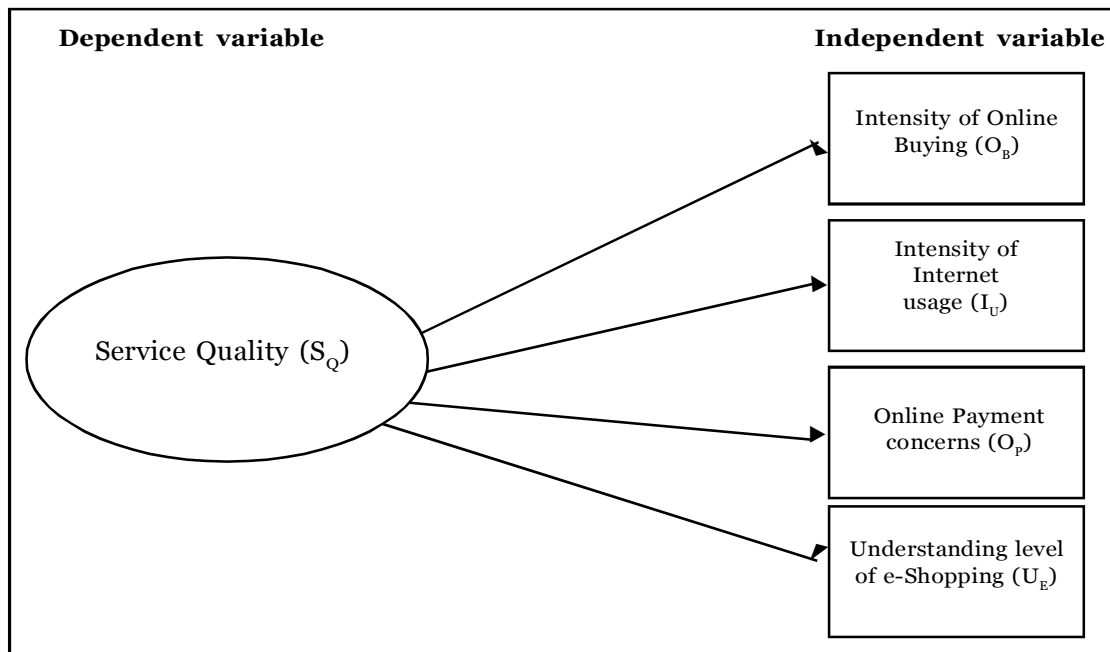
Sampling and Reliability

The nature of the topic and the objective framed warrant Online Buyers as sample for this study. On the basis of Social Articulation levels, three segments that are identified as relevant sampling areas for the purpose of this work were located on random basis. They are Metropolitan Cities or 1st tier cities out of which Delhi as one of the sampling places is finalized on random basis, 2nd tier cities or Other Cities which are mostly the State capitals in India. Out of these cities Srinagar which is a capital of Jammu and Kashmir State as one of the sampling places is finalized on random basis and Sub Urban places, out of these places, Chidambaram as one of the sampling places is finalized on random basis.

The survey instrument was validated with appropriate reliability analysis comprising the computed value of Cronbach alpha and the alpha value for all the study variable taken up in the survey instrument is found to be well above the suggested value of 0.6 (Nunnally, 1978). The specific, details of alpha value for each of the study variable constituting the present work is shown in the Table-1.

Table 1: Details of Cronbach Alpha Value

S. no.	Factor	Cronbach Alpha
1	Intensity of Online Buying	0.776
2	Intensity of Internet usage	0.733
3	Online Payment concerns	0.765
4	Understanding levels of e-Shopping	0.821
5	Overall Service Quality	0.923

**Figure 1: Model to find out Effects of Online Buyer Characteristics on Service Quality**

$$S_Q = \beta_o + \beta_1 O_B + \beta_2 I_U + \beta_3 O_P + \beta_4 U_E + \mu \quad (1)$$

Where,

S_Q : Perceived Service Quality in e-Retailing

O_B : Intensity of Online Buying

I_U : Intensity of Internet usage

O_P : Online Payment concerns

U_E : Understanding levels of e-Shopping

$\beta_1, \beta_2, \beta_3, \beta_4$: Regression coefficient which is dependent normal variable with zero mean and corresponding variance

β_o : Constant

μ : Standard error

Detail of Statistical Tools

The statistical tools employed for the present work comprise the basic descriptive details of the study variables in addition to Multiple Regression models were tested through SPSS as part of analysis.

Multiple Regression Models

1. Multiple regression model for dependency effects of Overall Service Quality on Online Buyer characteristics corresponding to equation-1.

Based on the research model assumed and the corresponding statistical tools, hypothesis formulated in this work is tested and provided with corresponding results in the subsequent sections.

Construct Validity

Standardized scale for measuring e-Service Quality in e-Retailing was used, the scales for measuring Online Buyer characteristics such as Intensity of Online Buying, Intensity of Internet usage, Online Payment concerns and Understanding levels of e-Shopping are far from maturity. Hence, to establish construct validity for the online buying characteristics, Exploratory Factor Analysis (EFA) were performed. In this regard, 6 items considered for measuring Intensity of Online Buying, 6 items considered for measuring Online Payment Concerns, 4 items considered for measuring Intensity of Internet usage and 11 items considered for measuring Understanding level of e-Shopping. Several well-recognized criteria for the factorability on the basis of item correlations were used separately for each factor. The reasonable factorability of the model could be ensured with the pattern of correlations obtained among the items. Also, the Kaiser-Meyer-Olkin measure of sampling adequacy for each online buying characteristics was above the recommended value of 0.60 (Nunnally and Bernstein, 1994) and the test of sphericity was significant at 5 percent level.

During the repeated procedures of factor analysis on the basis of Principal Component Analysis for measuring the Intensity of Online Buying, an item with a factor loading value of below 0.5 was eliminated and the remaining 5 items got extracted and loaded in two factors. After examining the details of the items loaded in each of the factor, the factor 1 was named as 'Propensity of Online Buying' and the factor 2 was named as 'Actual Online Buying'. Similarly, for measuring Online Payment Concerns, two items got eliminated and the remaining 4 items got extracted and loaded in two factors. After examining the details of the items loaded in each of the factor, the factor 1 was named as 'Perceived Security on e-Payment' and the factor 2 was named as 'Preference for Physical Payment'. Also, for measuring the Intensity of Internet usage, an item with a factor loading value of below 0.5 was eliminated and the remaining 3 items got extracted and loaded in single factor and for Understanding level of e-Shopping, four items with a factor loading value of below 0.5 was eliminated and the remaining 7 items got extracted and loaded in single factor.

Results and Discussion

Service Quality dependency on Online Buyer characteristics

The dependency effects of Perceived overall Service Quality on factors like Propensity of Online Buying,

Actual Online Buying, Understanding levels of e-Shopping, Perceived Security on e-Payment, Preference for Physical Payment and Intensity of Internet usage among Online Buyers in e-Retailing is defined in hypothesis-1, taken up and its results are shown in the table-1, as an outcome of regression model conceptualized. From the results, it can be inferred that the F value of 91.722 is found to be significant at 5 percent level and hence, the hypothesis-1 is rejected. These results suggest that Perceived overall Service Quality depends on group of factors such as Propensity of Online Buying, Actual Online Buying, Understanding levels of e-Shopping, Perceived Security on e-Payment, Preference for Physical Payment and Intensity of Internet Usage among Online Buyers. While these factors are identified to be causing influences on customers commitment to the e-Retailing web site and actual purchase behavior (Park and Kim, 2003), the finding that Service Quality has dependency with these Online Buyer characteristics establishes the basis to link Service Quality in e-Retailing with that of commitment and purchase behavior. Further, the adjusted R square value of 0.665 from the table-1 indicates that 66 percent of Perceived overall Service Quality among Online Buyers in e-Retailing is significantly dependent on these groups of factors. Also the 't' values of 3.269, 19.264 and 4.475 corresponding to the factors Propensity of Online Buying, Understanding levels of e-Shopping and Perceived Security on e-Payment are found to be having significant effects on the model conceived.

More specifically, Understanding levels of e-Shopping among Online Buyers in e-Retailing is found to be having significant superior effect on Perceived overall Service Quality with highest 't' value of 19.264. Similarly, Perceived Security on e-Payment among Online Buyers in e-Retailing cause's significant good effect on Perceived overall Service Quality in e-Retailing with the next higher 't' value of 4.475. The 't' value of 3.269 obtained for the Propensity of Online Buying among Online Buyers in e-Retailing significantly causes considerable dependency effect on the Perceived overall Service Quality.

However, the 't' values of -0.525, -0.185 and 0.292 corresponding to Actual Online Buying, Preference for Physical Payment and Intensity of Internet Usage are not found to be significant at 5 percent level. Hence, it can be inferred that the Perceived overall Service Quality do not depend on factors like Actual Online Buying, Preference for Physical Payment and Intensity of Internet Usage in the regression model conceived.

Table 2: Results of the Regression for Hypothesis-1

Model	Unstandardized Coefficients		Standardized	t	F	Adjusted R Square
	B	Std. Error	Beta			
(Constant)	64.686	3.953		16.362*	91.722*	0.665
Propensity of Online Buying	0.752	0.230	0.094	3.269*		
Actual Online Buying	-0.072	0.137	-0.015	-0.525		
Understanding levels of e-Shopping	1.579	0.082	0.601	19.264*		
Perceived Security on e-Payment	0.987	0.221	0.137	4.475*		
Preference for Physical Payment	-0.035	0.187	-0.005	-0.185		
Intensity of Internet usage	0.044	0.149	0.009	0.292		

Dependent variable: Overall Service Quality; * Significant at 5 percent level;

Source: Computed from primary data

Further, the above results confirm that higher Understanding levels of e-Shopping, higher Perceived Security on e-Payment and higher Propensity of Online Buying among Online Buyers in e-Retailing contribute to higher Perceived overall Service Quality levels in e-Retailing.

Conclusion and Implications

Perceived overall Service Quality on e-Retailing among Online buyers has significant dependency on Online Buyer characteristics such as Propensity of Online Buying, Actual Online Buying, Understanding levels of e-Shopping, Perceived Security of e-Payments, Preference for Physical Payments and Intensity of Internet Usage. Out of these characteristics Understanding levels of e-Shopping, Perceived Security of e-Payments and Propensity of Online Buying is found to be having significant dependency effect on Perceived overall Service Quality in e-Retailing.

The finding that Perceived Service Quality among Online Buyers has dependency with Online Buyer characteristics gives scope for enhancements in Online Buyer characteristics towards better realization of the services offered by e-Retailers. While some of these characteristics such as Propensity of Online Buying and Actual Online Buying are the resultant of the e-Retailers' competitiveness in the market, the other Online Buyer characteristics such as Understanding levels of e-Shopping, Perceived security on e-Payment Systems and the Intensity of Internet usage are the resultant of the e-Readiness of the market place. Also, enhancements into these characteristics of the Online Buyers are beneficial on macroeconomic perspective of the region and hence, Interventions to achieve better Online Buyer

characteristics becomes the responsibility of both the Governments and the e-Retailers operating in various regional places

References

- Akbar, M. M., & Parvez, N. (2009). Impact of service quality, trust, and customer satisfaction on customer's loyalty. *ABAC Journal*, 29(1), 24-38.
- Aramstrong, G., Adam, S., Denize, S., & Kotler, P. (2015) Principles of marketing 6e. *Pearson of Australia*, 284-285.
- Batagan, L., Pocovnicu, A., & Capisizu, S. (2009). E-Service Quality Management. *Journal of applied quantitative methods*, 4(3), 372-381.
- Behjati, S., Nahich, M., & Othaman, S. N. (2012). Interrelation between E-service Quality and E-satisfaction and Loyalty. *European Journal of Business and Management*, 4(9), 75-85.
- Chang, H.H., & Wang, H.W. (2008). The Relationships among e-Service Quality, Value, Satisfaction and Loyalty in Online Shopping. *European Advances in Consumer Research*, 8(3), 10-15.
- Cheng, J. M. S., Wang, E. S. T., Lin, J. Y. C., Chen, L. S., & Huang, W. H. (2008). Do extrinsic cues affect purchase risk at international e-tailers: The mediating effect of perceived e-tailer service quality. *Journal of Retailing and Consumer services*, 15(5), 420-428.
- Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e commerce: the roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, 24(1), 85-114.
- Chung, K. H., & Shin, J. I. (2008). The relationship among e-retailing attributes, e-satisfaction and e-loyalty. *Management Review: An International Journal*, 3(1), 23-45.
- Dolatabadi, H. R., & Ebrahimi, H. (2010). Factors Influencing Iranian Consumers' Trust in Internet Shopping. *European Journal of Social Sciences*, 16(2), 307-319.

- Gronroos, A. (1984). Service Quality and its relations between customer and provider. *Journal of Business Research*, 12(2), 48-60.
- Gurcan, A. (2007). The validity and reliability of the Problematic Internet Usage Scale. *Educational Sciences: Theory & Practice*, 7(1), 411-416.
- Haq, Z. U. (2012). Perception towards online shopping: an empirical study of Indian consumers. *National monthly journal of research in commerce & management*, 1(8), 9-33
- Hernandez, B., Jimenez, J., & Jose Martín, M. (2011). Age, gender and income: do they really moderate online shopping behaviour?. *Online Information Review*, 35(1), 113-133.
- Javadi, M. H.M., Dolatabadi, H.R., Nourbakhsh, M., Poursaeedi, A., & Asadollahi, A. R. (2012). Online Shopping Behavior of Consumers. *International Journal of Marketing Studies*, 4(5), 81-99.
- Jusoh, Z.M., & Ling, G. H. (2011). Factors Influencing Consumers' Attitude Towards E-Commerce Purchases Through Online Shopping. " *International Journal of Humanities and Social Science*, 2(4), 223- 231.
- Keisidou, E., Sarigiannidis, L., & Maditinos, D. (2011). Consumer characteristics and their effect on accepting online shopping, in the context of different product types. *International Journal of Business Science & Applied Management*, 6(2), 31-51.
- Keisidou, E., Sarigiannidis, L., & Maditinos, D. (2011). Consumer characteristics and their effect on accepting online shopping, in the context of different product types. *International Journal of Business Science & Applied Management*, 6(2), 31-51.
- Liao, Z., & Cheung, M. T. (2001). Internet-based e-shopping and consumer attitudes: an empirical study. *Information & Management*, 38(5), 299-306.
- Lovelock, C. & Gummesson, E. (2004). Whither services marketing? In search of a new paradigm and fresh perspectives. *Journal of Service Research*, 7(1), 20-41.
- Luo, J., Ba, S., & Zhang, H. (2012). The Effectiveness of Online Shopping Characteristics and Well-Designed Websites on Satisfaction. *Mis Quarterly*, 36(4), 1131-1144.
- Michal, P. (2012). On-line Shopping on B2C Markets in the Czech Republic. *Journal of Competitiveness*, 4(4), 36-49.
- Niranjanamurthy, M., Kavyashree, N., Jagannath, M.S., & Chahar, D.D. (2013). Analysis of E-Commerce and M-Commerce: Advantages, Limitations and Security issues. *International Journal of Advanced Research in Computer and Communication Engineering*, 2(6), 2360-2371.
- Nunnally, J. & Brenstein Ira, H. (1994). Psychometric Theory. *New York: McGraw-Hill*.
- Nunnally, J. (1978). Psychometric Methods. *New York: McGraw-Hill*.
- Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). ES-QUAL a multiple-item scale for assessing electronic service quality. *Journal of service research*, 7(3), 213-233.
- Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, 31(1), 16-29.
- Prajapati, P.S & Thakor, P.M (2012). Understanding consumer online shopping attitudes and behavior: contribution from Technology, tradition and trust perspective. *Journal of Asian Research Consortium*, 1(5), 65-74
- Rahman, T. (2012). Organized Retail Industry In India—Opportunities And Challenges. *International Journal of Research in Finance & Marketing*, 2(2), 14-27.
- Rajmohan, P. and Sayel, R. (2011). B2C e-Commerce adoption possibilities in UAE: an empirical study on E-Readiness of consumers. *Skyline Business Journal*, 1 (1), 43-50.
- Seth, N., Deshmukh, S. G., & Vrat, P. (2005). Service quality models: a review. *International Journal of Quality & Reliability Management*, 22(9), 913-949.
- Shergill, G. S., & Chen, Z. (2005). Web-based shopping: consumers' attitudes towards online shopping in New Zealand. *Journal of electronic commerce research*, 6(2), 79-94.
- Shih, H. P. (2004). An empirical study on predicting user acceptance of e-shopping on the Web. *Information & Management*, 41(3), 351-368.
- Shim, S., Eastlick, M. A., Lotz, S. L., & Warrington, P. (2001). An online prepurchase intentions model: The role of intention to search. *Journal of retailing*, 77(3), 397-416.
- Udo, G. J. (2001). Privacy and security concerns as major barriers for e-commerce: a survey study. *Information Management & Computer Security*, 9(4), 165-174.
- Yildirim, F., & Cengel, O. (2012). The Perceived Risk And Value Based Model Of Online Retailing. *Online Academic Journal of Information Technology*, 3(9), 7-33.
- Zeithaml, V. & Bitner, M. (2003). Service Marketing: Integrating Customer Focus Across the Firm. *New York: McGraw-Hill*.
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1988). Communication and control processes in the delivery of service quality. *The Journal of Marketing*, 35-48.
- Zhou, L., Dai, L., & Zhang, D. (2007). Online shopping acceptance model-A critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, 8(1), 41-62.

Determinants of Purchase Intention of Private Brands in India: A Study Conducted on Hypermarkets of Delhi

P.K. Agarwal* & Vijay Prakash Gupta**

Abstract

The present study proposes to study the impact of factors that affects the purchase intention of customers toward private brands with the broad objective to assist managers and marketers to gain good insight about the behavior of Indian buyers so that they can formulate effective strategies to improve the overall performance of private brands in terms of customer acceptability in hypermarkets. Based on extensive review of literature seven independent variables namely perceived price, perceived quality, perceived risk, perceived value, store image, store brand familiarity, shelf space allocation are identified to analyze the purchase intention towards private brands as dependent variable. The study was conducted Sep to Dec, 2017. For this research Delhi city is the main focus of this study as there are many hyper markets operate in this city. As well Delhi is full of multi-social class of people. Therefore, this research is to study Indian consumer attitude towards private brands. The research design used is causal research design. Data was collected from the customers through primary sources using questionnaire as instrument. A survey questionnaire was prepared using five point Likert scale to measure the response on continuous scale. Sample frame constitutes the customers of two hyper retail stores (Big Bazaar and Easy Day) who purchased the

private brand in their purchase. Sampling techniques was judgemental and the effective sample size was 369. Descriptive and inferential statistics was used as data analysis tool. The taken model explains 76.2% variability of purchase intention of private brands by identified seven variables. Six independent variables viz., Perceived price, Perceived quality, Perceived risk, Perceived value, Store image and Store brand familiarity have significant impact on purchase intention towards private brands while one independent variables viz., Shelf space allocation have no significant impact on purchase intention towards private brands. Perceived risk & Perceived price is negatively related with purchase intention towards private brands. Store image has highest impact followed by Store brand familiarity and Perceived value. On the basis of the results of this research, it can be recommended the hypermarket retailers should try to enhance the image of their store and their private brands. They should also create the brand value which means that the benefits sought must outweigh its cost. As price and perceived risk are negatively related so the retailers should be vigilant about the price and perceived risks by the customers of private brand customers.

Keywords: Private brand, Purchase intention, Price, Perceived quality, Perceived risk, Perceived value, Store image, Store brand familiarity and Shelf space allocation.

* Professor, Ph.D., Department of Management, Wolaita Sodo University, Ethiopia, agarwalpk001@gmail.com

** Assistant Professor, Department of Management & Humanities, G.L. Bajaj Institute of Technology & Management, Gr. Noida India, vijayguptacmd@gmail.com

Background of the Study

The cut throat competition in retailing market forces companies to have competitive strategies in order to differentiate their products from others rivals, achieve customers' loyalty and gain long-term profit. Today the middle class group customer has become more sensitive to prices as they try to spend less money purchasing, they still tend to seek higher quality from the products.

To deal with these difficulties, the hyper market retailers start to produce products their own brand and only sell them in their own stores (specific chain of stores). These products are called as private brands or store brands, classified as consumer products and are manufactured on behalf of retailers, branded with retailer's brand or trademark and sold through their own retail outlets (Jaafar and Lalp, 2012). The retailer design types of goods, packaging and marketing of the products in order to create the relationship between the products and the store's customer base. Private brands provide the more alternatives to the customers to evaluate and purchase products with the same quality but at lower prices.

Private brands are generally cheaper than national-brand products, because the retailers can maximize the production to suit consumer demand in their stores and also cut down promotion costs and transfer the benefit to customers. Most stores sell some combination of national brands as well as private brands. Private brands are of particular interest to these retailers, because these help the stores in differentiating their merchandize, increase the potential sales by attracting more customers and they may help control costs and build up store loyalty (Vahie, 2006). Increased shopping frequency has been associated with greater brand familiarity, and thus a greater incidence of private brand purchasing (Shannon, 2005).

Private brands become popular because the price is cheaper than national brands. Due to the price of the private label products, the popularity of this kind of products has increased in many countries since nineteenth century (Chakraborty, 2011). In the past two decades private label brands have shown a big increase which has influenced consumers' shopping and purchase behaviors all over the world and also enabled private brands to become strongly competitive against manufacturers' brands. Today retailers with their private brands have penetrated into almost every single product category striving to attract and capture increasing number of consumers and have

their market share increased as well. The growing importance of private label brands also impacted manufacturer-retailer relationships by increasing and strengthening bargaining power of retailers. Binniger (2008) noted that consumers today are more willing to purchase private label brands and are delighted to have them available in stores in which they usually shop.

The expansion of private brands is driven by two factors viz., consumers' familiarity towards private brands and retailers' motivation for higher profit along with retailers' capability to manage private brands effectively. The market share of private label brands is still on increase in Indian market. Sales of private brands in Indian market have not peaked yet, and are still growing making Indian market a compelling space to study, analyze, and predict the future success and growth of private brands.

Statement of the Problem

The Indian retail industry is estimated at USD 520 Billion in 2013 and projected to grow at a rate of 13 % and will have a market size of USD 950 billion by 2018 (E&Y, 2014). Retail sector has become competitive with the emergence of organized retail players. Currently retailers are focusing on developing their own brands or private brands to enhance customer loyalty, to add diversity and for better margins. Categories like packaged foods, refined edible oils, breakfast cereals, ketchups and sauces account for 75% of total sales of private brands (Hindustan Times, 2013). So this makes these categories attractive to organized retailers to develop their own private brands or store brands. Future group has private brands in apparels, electronics, food and personal care segment. Tata group has own brands in apparels and electronics segment. We have players like ITC, Koutons, Shoppers stop and other foreign players like Lifestyle, Zara in apparel segment who have their own store brands. Reliance group, Aditya Birla, has private brands limited to food, grocery and personal care products. RPG group have private brands in food, personal care and apparels. Even though private label preference is increasing it requires an in depth study to understand the major factors that influence the consumer purchase as there are very limited research on the topic. Hence this study tries to fulfill this literature gap with the purpose. The research proposes to study the impact of factors that affects the purchase intention of customers toward private brands in two hyper markets of Delhi namely Big Bazaar and Easy Day as they have private brands in

multiple product lines. From research findings, managers and marketers would gain good insight about the behavior of Indian buyers so that they can formulate effective strategies to improve the overall performance of private brands in terms of customer acceptability.

Research Objectives

1. To identify the various factors that affects the purchase intention of customers toward private brands in Delhi
2. To analyze the significance of these factors on the purchase intention of customers towards private brands.

Literature Review

Purchase intention

Consumers' buying decision is very complex. Usually purchasing intention is related with consumers' behavior, perception and their attitude. Purchase behavior is an important key point for consumers during considering and evaluating of certain product (Keller, 2001). Intentions represent motivational components of a behavior, that is, the degree of conscious effort that a person will exert in order to perform a behavior (Ajzen 1991). Purchase intention is used widely as an indicator of consumer purchase behavior after considering and evaluating the product (Grewal et al, 1998). Ghosh (1990) stated that purchase intention is an effective tool use in predicting purchasing process. Once the consumers decide to purchase the product in certain store, they will be driven by their intention. However, purchase intention might be altered by the influence of price, quality perception and value perception (Zeithaml, 1988) and Grewal et al (1998). In other words, purchase intention reflects the likelihood in which the consumers will buy certain products or services in the short-term buying decision (Wu, Yeh, & Hsiao, 2011).

Factors Influencing Purchase Intention Towards Private Label Product

In modern hypermarkets consumer purchasing behaviour is changing over time (Besharat, 2010). Consumers have wider options in terms of products selection in terms of manufacturers' brand and private brands. In developed countries, some consumers chose to purchase private brand due to price (Oh, 2003). In US, private brands hold nearly every four items sold in the supermarket and promotion of these items remains active

(Liljander et al., 2009). In Malaysia, the consumptions of own brand have also shown significantly increasing since 2009 (Ganesah, 2010). Several studies point out that perceived risk, perceived value for money, perceived quality, price-consciousness, trust, familiarity are prime determinants of customer attitude and purchase intention towards private brands (Zeithaml, 1988; Dick et al, 1996; Baltas, 1997; Diallo et al, 2013). Some researches highlights on price factor (Burton et al, 1998) while other argue that non-price factors may explain the private label proneness of consumers better than price indicator and are proven predictors for purchase intention (Hoch & Banerji, 1993; Sheau-Fen et al., 2012).

Perceived Price: Private brands' lower prices are most frequently anticipated as major selling point than manufacturer's brands. Baltas et al., (2007) concluded that price sensitivity has a positive and significant relationship with the intention to purchase brands. Hoch and Banerji (1993) inferred that decrease in aggregate disposable income leads to increase in share of private brands with no change in overall level of perceived quality of a product. Consumers who have better attitudes towards private label brands are extremely price conscious essentially minimizing other factors in brand evaluations (Burton et al. 1998). The study of Ailawadi et al. (2001) proposes that consumer's decision whether to buy private label brand is driven by economic (savings) and hedonic (product quality) benefits which are reflected by psychographic traits, such as price consciousness and quality consciousness and used to identify private label brand prone consumers.

Berges. et.al (2014) study among French retail consumers confirmed that consumers are sensitive to price when they purchase high quality Private brands compared with National brands in categories like Pasta, biscuits and jam. The study looked into few categories only. The study by Singh and Agarwal (2013) among consumers of Noida region concluded that price consciousness and impulse buying determine private label purchase in food and grocery items. The other factors like store loyalty and value consciousness also determine private label purchase. Machavolu and Raju (2013) studied private label purchase among consumers of Andhra Pradesh concluded that Price is one major factor followed by quality that determine private label purchase in food and apparel segment. Sathya (2013) studied store brand preference among consumers of Chennai and found

that price, quality, store name, promotions, extrinsic and intrinsic cue determine purchase in food and grocery segment.

Perceived Quality: Perceived quality is the consumer's judgment about the superiority or excellence of a product (Zeithaml, 1988). Perceived quality refers to customer's evaluation of a product or a brand that meet an individual's expectation (May, Yoon and Kim 2011). Perceived quality is an important element of brand equity and determines it as overall and intangible feelings about a brand that is usually based on underlying dimension including characteristic of products such as performance and reliability (Aaker, 1996). Chen (2008) argues that consumers hope to spend less money on products, but they can acquire at least the same quality as other high-priced products. Perceived quality is very significant determinant of private label products success (Sprott and Shimp, 2004) and was found that have a substantial impact on purchase intention (Bao et al., 2011). Sethuraman and Cole (1997) stated that a perceived quality difference is an important reason for consumers to pay more for the national label products. Richardson et al. (1996) found that a perceived quality difference between private label products and national label products influenced consumers' propensity to purchase private label products. Perceived quality differential is one of the major factors that determine the private label purchase in products like cheese, cookies, flour, frozen pizza, jams, jellies and ketchup, among US consumers (Sethuraman and Cole (1999).

The study by Machavolu (2014) among retail consumers of Reliance retail outlet in Andhra Pradesh concluded that quality is an important factor that determines private label purchase in food, grocery and apparel segment. Singh (2014) study among retail consumers of NCR region found that quality and brand image determines consumer preference of private brands in apparel segment. Permarupan et al. (2014) studied Private label purchase among consumers of Malaysia and concluded that familiarity and perceived quality as major factors that determine store brand purchase in general. This study didn't look at any category. Gala and Patil (2013) concluded that low quality is one factor that reduces private brands' purchase in general. The study by Nandi (2013) among consumers of Kolkata confirmed that quality and reliability are the major factors that determine private label purchase in categories like durables, personal care, apparels and consumable products. However, consumers tend to make trade-off

decisions between quality and price when choosing different products in similar category. If consumers see little quality difference between private label products with other products or if they think the price difference is larger than the quality difference, they may prefer to purchase the private label products.

Perceived Risk: Consumer behavior is associated with a risk in the sense that any action of a consumer will have consequences which he cannot predict with certainty, and some of which at least are likely to be unpleasant (Bauer, 1960). Perceived risk is the uncertainty of a desired performance that all customers experience when making purchasing decisions (Dowling, 1986). Risk may manifest itself in a variety of ways such as fear that product may not possess deliverable attitudes, a sense that the purchase of particular brand may invite social disapproval or uncertainty regarding brand performance (Dick et al., 1995).

Mitchell (1999) contends that perceived risk is actually a multidimensional phenomenon which can be segmented into various different risk components. *Financial risk* describes the probability when the buyer is anxious about losing money after purchasing a particular product. According to the Schiffman and Kanuk (2010) financial risk is the risk that the product will have on it is price that is not in accordance with the consumers' costs to get it. *Performance risk* appears when consumers are afraid that the product does not perform satisfactorily or not provide benefits as promised. Bettman (1973) believes that consumers tend to use their own knowledge and experience to judge the performance of a specific product. Especially, if the consumers purchase a product at the first time, there is a significant increase in their risk perception due to lack of information or expert recommendation (Arslan, Gecti, & Zengin, 2013). *Physical risk* reflects the concern of negative consequences that can damage the health or injure physically the users after using a typical product (Mitchell, 1998).

Veronika (2013) concluded that the financial risk perception has a positive and significant effect on purchase intention. Richardson et al. (1996) advocated that the level of perceived risk in a specific product segment is a vital factor in private label product purchases. Thus, certain categories of merchandise are more suitable for private brands than others. Past researchers indicated that consumers' perceived risk negatively influence the intention to purchase private label products (Dursun et al., 2011; Bao et al., 2011; Jaafar et al.,

2012; Rizkalla and Suzanawaty, 2012; Tih and Lee, 2013; Mierer et al. 2006; Wu et al., 2011; Sheau-Fen et al., 2012; Arslan et al., 2013).

Perceived Value: According to perceived value means consumer assessment on the utility of product what is received and what is given (Cronin et al., 2000). Burton et al. (1998) contend that consumers also may consider the ratio of quality received to price paid for an item, and they are thus value conscious. According to Garretson et al. (2002), consumers who balance price and quality in their purchase decisions, have a more favorable attitude toward private brands. Therefore, for private label brands, all other things being equal, greater consumer value consciousness lead to higher levels of intention to purchase and choice of private label brands. Kittilertpaisan and Chanchitpreecha (2013) indicated that perceived value is very important in the process of purchasing. Therefore, consumers are willing to purchase if they perceived worth value in high quality level and low in price (Chen, 2008). Veronika (2013) reported that the value of consciousness has a positive and significant effect on purchase intention consumers pay attention to a private label attached in their minds. Murali and Gugloth (2013) studied private label purchase among consumers of Bangalore and concluded that consumer prefers private brands due to cost effectiveness and belief that they provide value. Factors like offers, packaging and unavailability of national brands also influence private brand purchase. Past researchers indicated that consumers' perceived value positively influence the intention to purchase private label products (Diallo et al., 2013, Chang and Wang, 2011, Beneke et al., 2013, Jaafar et al., 2012, Veronika et al., 2013, Chandon et al., 2011).

Store Image: Store image is defined in the shopper's mind, partly by the functional qualities and partly by an aura of psychological attributes. Store image develops from consumers' objective and subjective perceptions learned over time (Martineau, 1958). Lindquist (1974) conceptualized store image structure across nine dimensions which are service, merchandise, clientele, promotion, convenience, store ambience, institutional factors, physical facilities and post transaction satisfaction. Consumers use a store's image to evaluate that store and it will also affect their purchase intention. Store image has a positive relationship with patronage intentions and consumers' purchase intentions (Grewal et al., 1998). Whereas, Chien et al. (2014) indicates that the higher store image, the higher the consumers' perception of the quality

of the private label products and hence the higher their intention to purchase it.

According to Richardson et al. (1994) product provides a bundle of cues which indicate its quality to consumers. Those cues are classified as being two types – extrinsic (store image or product's price) and intrinsic (aroma or ingredients) of a product. Store image, as an extrinsic cue, can then be as a determinant quality of private label brand which further shapes purchasing behavior towards it. A study of Delgado-Ballester et al. (2014) agreed with a research done by Richardson et al. (1994) that in case of private brands, consumers put more emphasis on such extrinsic cues as name, price, package, design or store's identity than then harder to process intrinsic cues, because they are more easily recognized, integrated and interpreted.

Chandon et al. (2011) study in France concluded that store image perceptions and private label price image perceptions along with factors like value consciousness and perceived quality determine the private label purchase in food and groceries. Factors like store image and product signature positively impact consumer's quality perception which determines the private label purchase (Bao et al., 2011) in drugs and electronics among US consumers. Krishna (2011) study in Indian context with respect to apparels concluded that private label purchase is determined by image of the store, brand awareness, cheaper prices, discounts, comfort, durability, ambience and store atmospherics. Gupta et al. (2014) study among retail consumers of Madhya Pradesh found that brand image of retailer can influence the perceived quality and risk associated with private label purchase which can determine the purchase. It didn't look into the category factors. Fischer et al. (2014) studied private label purchase among German consumers concluded that private label share is more related to store loyalty in relatively higher involvement categories. The study was limited to food and general merchandise. Rathod and Bhatt (2013) in their study of retail consumers of Ahmadabad concluded that store image and private label brand image can influence loyalty which determines the purchase of store brands. The study was limited to apparel category. Kumar and Jawahar (2013) studied retail consumers of Coimbatore and concluded that store brand preference depends on retail patronage. The study was limited to food, grocery and general merchandise.

Store Brand Familiarity: Familiarity is one among the major factors that influence store brand purchase. This is determined by product knowledge and brand comprehension. Familiarity is conceptualized that “the number of product related experiences that have been accumulated by the consumer (Alba & Hutchinson, 1987). Store brand familiarity increase with the information available about it which can increase store brand proneness due to reduction in perceived risk and perceived quality variation associated with these brands in products like margarine among US consumers (Bettman, 1974). Raju’s (1977) study in US context concluded that when consumers are familiar with the products it can enhance the consumer confidence which can be detrimental for purchase. Product familiarity was related positively to the degree of confidence in brand selection in a purchase situation for categories like stereo receivers. This can be applied to private label also. The study has limitations in terms of looking into the extent to which information are available with the consumers and its influence on purchase decision.

With respect to private brands, familiarity is empirically proved as an important factor that motivates private label proneness by declining uncertainty. When private brands are more familiar to the buyers, the difference of risk perception between national brands and private brands becomes smaller (Mieres et al., 2006). Mieres et al. (2006) believe that familiarity factor motivates the buyers to judge private brands as high quality alternatives when they lack experience about these products. This is to say, when consumers get more knowledge or information about private brands, they perceive their quality to be less different in comparison with national brands (Richardson et al., 1996). Sheau- Fen et al. (2012) concluded that familiarity is the most significant determinant that has effect on consumer purchase intention toward private label directly and indirectly through perceived quality as well.

Shelf Space Allocation: Shelf space allocation is a factor that indirectly affects the purchase of private label purchase. Shelf space allocation can enhance the visibility of private brands or store brands. Retailers always place their store brands in shelves adjacent to National brands. Dursun et al. (2011) found that shelf space allocation contributes significantly in enhancing product familiarity and perceived quality. Zameer et al. (2012) stated that Private brands are placed near to national brands to make consumer.

Conceptual Framework

Based on extensive review of literature seven independent variables namely Perceived price, Perceived quality, Perceived risk, Perceived value, Store image, Store brand familiarity, Shelf space allocation were identified to analyze purchase intention towards private brands as dependent variable. The objective is to analyze the impact of impact of Perceived price, Perceived quality, Perceived risk, Perceived value, Store image, Store brand familiarity and Shelf space allocation on purchase intention towards private brands. The conceptual model is shown in fig 1

From the conceptual framework following mathematical model can be developed:

$$\text{PITPB} = \beta_0 + \beta_1 \text{PP} + \beta_2 \text{PQ} + \beta_3 \text{PR} + \beta_4 \text{PV} + \beta_5 \text{SI} + \beta_6 \text{SBF} + \beta_7 \text{SSA} + U$$

Where,

VETI = Voluntary employee turnover intention in Private Banks

β = is intercept & constant

$\beta_1 - \beta_6$ = Coefficients

PP = Perceived price

PQ = Perceived quality

PR = Perceived risk

PV = Perceived value

SI = Store image

SBF = Store brand familiarity

SSA = Shelf space allocation

U = Random error

Research Hypothesis

H₁: Perceived price has a significant impact on purchase intention towards private brands.

H₂: Perceived quality has a significant impact on purchase intention towards private brands.

H₃: Perceived risk has a significant impact on purchase intention towards private brands.

H₄: Perceived value has a significant impact on purchase intention towards private brands.

H₅: Store image has a significant impact on purchase intention towards private brands.

H₆: Store brand familiarity has a significant impact on purchase intention towards private brands.

H₇: Shelf space allocation has a significant impact on purchase intention towards private brands.

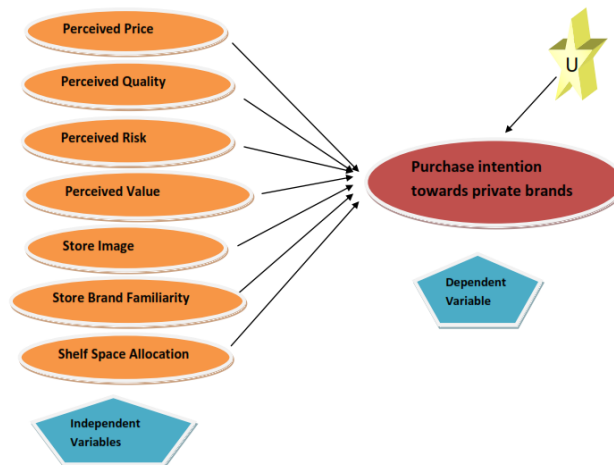


Fig. 1: Conceptual Model of the Study

Research Methodology

In India, Delhi city is the main focus of this study as there are many hyper markets operate in this city. As well Delhi is full of multi-social class of people. Therefore, this research is to study Indian consumer attitude towards private brands. The research design used is causal research design with the objective of identifying the impact of seven independent variables (perceived price, perceived quality, perceived risk, perceived value, store image, store brand familiarity and self space allocation) on dependent variable (Purchase intention towards private brands). Data was collected from the customers through primary sources using questionnaire as instrument. A survey

questionnaire was prepared using five point Likert scale (1= strongly disagree; 5= strongly agree) to measure the response on continuous scale. Sample frame constitutes the customers of two hyper retail stores (Big Bazaar and Easy Day) who purchased the private brand in their purchase. Sampling techniques was judgemental and the total sample size was 385. Descriptive and inferential statistics was used as data analysis tool. Pilot study was conducted on 25 customers to check the reliability and validity of the questionnaire. Reliability was used using Cronbach alpha to understand how closely the set of items are related as a group or factor. The Cronbach alpha of various factors ranges from .79 to .91 which shows that the questionnaire is highly reliable.

Table 1: Descriptive Statistics of Customer Responses on Independent Variables & Dependent Variable

Variables	Nature of variable	N	Mean	Std Deviation
Purchase intention towards private brands	Dependent variable	369	3.97	1.12
Price consciousness	Independent variable	369	4.13	0.95
Perceived quality	Independent variable	369	4.38	0.91
Perceived risk	Independent variable	369	4.39	0.94
Perceived value	Independent variable	369	4.83	0.81
Store image	Independent variable	369	4.85	0.65
Store brand familiarity	Independent variable	369	4.68	0.76
Shelf space allocation	Independent variable	369	3.98	0.78

Analysis & Discussion

Out of 385 questionnaires distributed to the respondents 369 were found to be complete and were successful after data cleaning.

Table 1 shows the summary of descriptive statistics is provided in which identifies the summary of measurements. The table shows that Perceived value of brand, store image and store brand

familiarity are the most important perceived factors of purchase intention towards private brands while

self space allocation was perceived as least important factor.

Table 2: Model Summary of Regression

Variables	R	R ²	Adjusted R ²	Std. Error of the Estimate	Durbin-Watson
IV –Perceived price consciousness, Perceived quality, Perceived risk, Perceived value, Store image, Store brand familiarity, Shelf space allocation DV-Purchase intention towards private brands	0.873	.762	.756	.1475	1.480

Table 2 depicts the model summary. It shows that the all independent variables explain 76.2% variability on customer satisfaction. The difference

between R² And adjusted R² is .006 which is very less; it means that the model can be generalized for total population i.e. customers of private brands.

Table 3: Analysis of Variance of Customer Satisfaction on Service Quality Variables

Variables		Sum of squares	df	Mean squares	F	Sig.
IV –Price consciousness, Perceived quality, Perceived risk, Perceived value, Store image, Store brand familiarity, Shelf space allocation DV-Purchase intention towards private brands	Regression	25.003	7	3.571	11.229	.000
	Residual	114.817	361	.318		
	Total	139.819	368			

Table 3 states that F value is on the higher side and p value is .000 which shows that model

explains significant variability on Purchase intention towards private brands

Table 4: Coefficients of Independent Variables

	Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	0.159	0.110	1.44	.131		
Perceived price	-0.351	0.061	-5.75	.001	.613	1.631
Perceived quality	0.352	0.052	6.76	.001	.456	2.193
Perceived risk	-0.465	0.065	-7.15	.000	.539	1.855
Perceived value	0.504	0.069	7.30	.000	.678	1.474
Store image	0.615	0.066	9.31	.000	.621	1.611
Store brand familiarity	0.535	0.069	7.75	.000	.631	1.585
Shelf space allocation	0.096	0.071	1.35	.103	.543	1.842

Table 4 shows the regression coefficients taking seven independent variables into account namely perceived price, Perceived quality, Perceived risk, Perceived value, Store image, Store brand familiarity and Shelf space allocation. The Purchase intention towards private brands increases by .159 when keeping other seven independent factors influence at zero and this increase is insignificant. It means that if the stated factors are not present then there is insignificant purchase intention.

The effect of each independent variable can be discussed simultaneously by taking each result by keeping others not changing (constant).

Table also infers that Perceived risk & Perceived price is negatively related with Purchase intention towards private brands. It means that as Perceived risk & Perceived price increases, purchase intention towards private brands reduces.

Looking at t value indicates that Store image has highest impact ($t = 9.31$) followed by Store brand familiarity ($t = 7.75$) and Perceived value ($t = 7.30$)

Six independent variables (Price consciousness, Perceived quality, Perceived risk, Perceived value, Store image and Store brand familiarity) have significant impact on purchase intention towards private brands as $p < .05$. One independent variables (Shelf space allocation) have no significant impact on purchase intention towards private brands as $p > .05$

The colinearity statics shows that the independent variables are not highly correlated and it verifies the divergent validity of constructs.

Regression model can be summarized as:

$$\text{PITPB} = \beta_0 + \beta_1 \text{PP} + \beta_2 \text{PQ} + \beta_3 \text{PR} + \beta_4 \text{PV} + \beta_5 \text{SI} + \beta_6 \text{SBF} + \beta_7 \text{SSA} + \text{U}$$

$$\text{PITPB} = .159 - 0.351 \text{PP} + .352 \text{PQ} + -0.465 \text{PR} + 0.504 \text{PV} + 0.615 \text{SI} + 0.535 \text{SBF}$$

Hypothesis Testing

From table 4 hypotheses can be tested, as:

H₁: Perceived price has a significant impact on purchase intention towards private brands as $.001 = P < .05$. Hypothesis is accepted.

H₂: Perceived quality has a significant impact on purchase intention towards private brands as $.001 = P < .05$. Hypothesis is accepted.

H₃: Perceived risk has a significant impact on purchase intention towards private brands as $.000 = P < .05$. Hypothesis is accepted.

H₄: Perceived value has a significant impact on purchase intention towards private brands $.000 = P < .05$. Hypothesis is accepted.

H₅: Store image has a significant impact on purchase intention towards private brands $.000 = P < .05$. Hypothesis is accepted.

H₆: Store brand familiarity has a significant impact on purchase intention towards private brands $.000 = P < .05$. Hypothesis is accepted.

H₇: Shelf space allocation has a significant impact on purchase intention towards private brands $.103 = P > .05$. Hypothesis is rejected.

Discussion, Conclusion and Recommendations

The research highlights on the factors which affects the purchase of private levels in Indian hypermarkets. The taken model explains 76.2% variably of purchase intention of private brands

by identified seven variables. Six independent variables viz., Perceived price, Perceived quality, Perceived risk, Perceived value, Store image and Store brand familiarity have significant impact on purchase intention towards private brands while one independent variables viz., Shelf space allocation have no significant impact on purchase intention towards private brands. Perceived risk & Perceived price is negatively related with purchase intention towards private brands. Store image has highest impact followed by Store brand familiarity and Perceived value. The research tests seven hypothesis out of which six are accepted and one is rejected.

On the basis of the results of this research, it can be recommended the hypermarket retailers should try to enhance the image of their store and their private brands. They should also create the brand value which means that the benefits sought must overweigh its cost. Price, Perceived quality and Perceived risk are other factors that are also to be looked into. As price and perceived risk are negatively related so the retailers should be vigilant about the price and perceived risks by the customers of private brand customers.

Results of this research contribute for both retailers and manufacturers, since the private label products are increasing in Indian market at high pace so the hyper market retailers should know influencing factors on which they have to look into to compete to the manufacturers' brand, while manufacturer brand, whose market position is experiencing more seriously threatened by private label products also need to develop strategies to maintain their products on the researched factors.

This research however has more rooms for improvement. Further research could be conducted to a different segment of consumers or expanded to other hyper markets or geographical area so that the result of our research may be verified whether they are reflective of the actual buying pattern of consumers in India.

References

- Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review*, 38(3), 103-126.
- Ailawadi, A. L. and Harlam, B. (2004). An empirical analysis of the determinants of retail margins: the role of store brand share. *Journal of Marketing*, 68, 147 - 162.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211

- Arslan, Y., Gecti, F., & Zengin, H. (2013). Examining perceived risk and its influence on attitudes: a study on private label consumers in Turkey. *Asian Social Science*, 9(4), 158-166. <http://dx.doi.org/10.5539/ass.v9n4p158>
- Baltas, G., & Doyle P (1998). An empirical analysis of private brand demand recognising heterogeneous preferences and choice dynamics. *The Journal of the Operational Research Society*, 49(8), 790-798,
- Baltas, G., Argouslidis, P.C. (2007). Consumer characteristics and demand for store brands.
- Bao, Y., Sheng, S., Bao, Y., & Stewart, D. (2011). Assessing quality perception of private labels: intransient cues and consumer characteristics. *Journal of Consumer Marketing*, 28(6), 448-458.
- Bauer, Raymond A. (1960). Consumer Behavior as Risk Taking, Proceedings of the American Marketing Association, 389-398.
- Beneke, J. (2010). Consumer perceptions of private label brands within the retail grocery sector of South Africa. *African Journal of Business Management*, 4(2), 203-220.
- Berges, F., Hassan, D., & Dihan, S. V. (2014). Are consumers more loyal to national brands than to private labels. *Bulletin of Economic research*, 1-17.
- Besharat, A. (2010). How co-branding versus brand extensions drive consumers' evaluation of new products: A brand equity approach. *Industrial Marketing Management*, 39(8), 1240-1249.
- Bettman, J. R. (1973). Perceived risk and its components: a model and empirical test. *Journal of Marketing Research*, 184-190.
- Binninger, A.S. (2008). Exploring the relationships between retail brands and consumer store loyalty. *International Journal of Retail & Distribution Management*, 36 (2), 94-110.
- Burton, S., Lichtenstein, D. R., Netemeyer, R. G., & Garretson, J. A. (1998). A scale for measuring attitude toward private label products and an examination of its psychological behavioral correlates. *Journal of the Academy of Marketing Science*, 26(4), 293-306. <http://dx.doi.org/10.1177/0092070398264003>
- Burton, S., Lichtenstein, D.R., Netemeyer, R.G., Garretson, J.A. (1998). A scale for measuring attitude toward store brands products and an examination of its psychological and behavioral correlates. *Journal of the Academy of Marketing Science*, 26(4), 293-306. <http://www.ebscohost.com>
- Chakraborty Samrat (2011). Perceptions & Buyer Behavior Towards Private -Label Colas: An Exploratory Study to Understand the Views of the Store Managers of United Kingdom, *The IUP Journal of Marketing Management*, 10(1), 5-18
- Chandon, J. L., & Mbayefall, D. (2011). Consumer choice of Private Label Brands in the French market: Proposition and test of a partial mediation model, Working papers – International Conference on marketing trends, Paris, 1-26.
- Chen, K.C. (2008). A study of the relationship between UK consumers' purchasing intention and store brand food products – take Nottingham city consumers for example. Master Dissertation. The University of Nottingham
- Chien, S., Yu, C., Wang, Y., & Kuo, P. L. (2014). Improving the Perceived Quality of Private Brands Using Co-Branding: The Role of Brand Equity and Store Image. *International Journal of Management and Sustainability*, 3(9), 540-551.
- Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of retailing*, 76(2), 193-218.
- Diallo, M. F., Chandon J.L., Cliquet, G., Philippe, J. (2013). Factors influencing consumer behaviour towards store brands: evidence from the French market. *International Journal of Retail & Distribution Management*, 41(6), 422-441. <http://dx.doi.org/10.1108/09590551311330816>
- Dick, A., Jain, A. and Richardson, P. (1995). Correlates of Store Brand Proneness: Observations. *Journal of Product and Brand Management*, 4(4) 8-15.
- Dowling, G. R. (1986). Managing your corporate images. *Industrial Marketing Management*, 15(2), 109-115.
- Dursun, I., Kabaday, E. T., Alan, A. K., & Sezen, B. (2011). Store brand purchase intention: Effects of risk, quality, familiarity and store brand shelf space. *Procedia-Social and Behavioral Sciences*, 24, 1190-1200.
- E., Y., & Rai. (2014). Pulse of Indian retail market, Ernst and young. *LLP Publications*, 1-16.
- Gala, D., & Patil, R.D. (2013). Consumer attitude towards private labels in comparison to national brands. *International Journal of Business and Management invention*, 2(5), 12-18.
- Ganesah, S. (2010), Shopping in-house. <http://thestar.com.my/lifestyle/story.asp?file=/2010/4/12/lifefocus/5957554&sec=lifefocus>
- Garretson, A. J. Fisher, D. and Bruton, S. (2002). Antecedents of private label attitude and national brand promotion attitude: similarities and differences. *Journal of Retailing*, 78(8), 91-99
- Ghosh, A. (1990). Retail management. Chicago: Dryden press.
- Grewal, D., Krishnan, R., Baker, J., & Borin, N. (1998). The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. *Journal of Retailing*, 74(3), 331-352.
- Hindustan times. (2013). Focus on home brands – future group and Tata's to scale up presence.
- Hoch, S.J. and Banerji, S. (1993). When do private labels succeed? *Sloan Management Review*, 34, 57-67. <http://bear.warrington.ufl.edu/weitz/mar7786/Articles/hoch%20banerji%201993.pdf>
- Jaafar, S. N., Lalp, P. E., & Naba, M. (2012). Consumers' Perceptions, Attitudes and Purchase Intention towards Private Label Food Products in Malaysia. *Asian Journal of Business and Management Sciences*, 2(8), 73- 90.
- Keller K.L. (2001). Building customer-based brand equity. *Marketing management*, 10(2). 14-19.
- Krishna, C. V. (2011). Determinants of consumer buying behaviour: an empirical study of private label brands in apparel retail. Vilakshan: *The XIMB Journal of Management*, 8(2)

- Liljander, V., Polsa, P., Riel, V. A. (2009). Modelling consumer responses to an apparel store brand: Store image as a risk reducer. *Journal of Retailing and Consumer Services*, 16, 281-290.
- Lindquist, J.D. (1974). Meaning of image – a survey of empirical and hypothetical evidence. *Journal of Retailing*, 50(4), 29-38.
- Machavolu, S. K., & Raju, K. V. V. (2013). Consumer Orientation towards Store Brands Vis-à-vis Name Brands. *IOSR Journal of Business and Management*, 1(10), 85-93.
- Martineau, P. (1958). The personality of the retail store. *Harvard Business Review*, 36, 47- 55.
- May Chen Yap, David Yoon Kin Tong, Kim Piew Lai (2011). Consumers' Perceptions towards International Supermarket Private Brand Products. *International Journal of Social Sciences and Humanity Studies*, 3(1)
- Mieres, C. G., Martin, A. M. D., & Gutierrez, J. A. T. (2006). Antecedents of the difference in perceived risk between private labels and national brands. *European Journal of Marketing*, 40(1/2), 61-82. <http://dx.doi.org/10.1108/03090560610637310>
- Mitchell, V. W. (1999). Consumer perceived risk: Conceptualisations and models. 33(1/2), 163-195.
- Nandi, D. (2013). Organized retailers and consumer's attitude towards PLs: A focus on consumers of Kolkata. *ELK Asia Pacific journal of Marketing and Retail Management*, 4(3), 1-10.
- Oh, H. (2003). Price fairness and its asymmetric effects on overall price, quality, and value judgments: the case of an upscale hotel. *Tourism Management*, 24, 387-399.
- Permarupan, Y. K., Mohan, M., Mamun, A. L., & Zainol, N. R. B. (2014). Consumer Perceived value and buying behavior of store brands. *International Business Management*, 8(2), 136- 141.
- Richardson, P. S., Dick, A.S. and Jain, A K.(1996). How consumer evaluate store brands. *Journal of Product and Brand Management*, 5(2), pp 19-28.
- Sathya, C. (2013). Integrating consumer perception factors towards private labels in food and grocery retail sector in Chennai region. *AP Journal of Economics and Management*, 2(6), 2278- 2629.
- Schiffman, L., & Kanuk, L.L. (2010). Consumer Behavior, 10e. United State of America: Pearson Education, Inc.
- Sethuraman, Raj and Catherine Cole (1997). Why do Consumers Pay More for National Brands than for Store Brands. Cambridge, MA: Marketing Science Institute, Report No. 97-126
- Shannon, R. & Mandhachitara, R. (2005). Private-label grocery shopping attitudes and behaviour: Across-cultural study. *Journal of Brand Management*. 12 (6), 461-474
- Sheau-Fen, Y., Sun-May, L., & Yu-Ghee, W. (2012). Store brand proneness: Effects of perceived risks, quality and familiarity. *Australasian Marketing Journal*, 20(1), 48-58.
- Singh, A. K., & Agarwal, P. K. (2013). Consumer behavior in organized retail: A empirical study of Noida. *International Journal of Management research and review*, 3(8), 3324-3331.
- Singh, A., & Singh, N. (2014). A comparative study of National brands vs. Private labels in apparel segment – A study in NCR region, *VSRD. International Journal of Business and Management Research*, 4(6), 169- 174.
- Sprott, D. E., & Shimp, T. A. (2004). Using product sampling to augment the perceived quality of store brands. *Journal of Retailing*, 80(4), 305-315.
- Tih, S., & Lee, K. H. (2013). Perceptions and Predictors of Consumers' Purchase Intentions for Store Brands: Evidence from Malaysia. *Asian Journal of Business and Accounting*, 6(2). 105-136.
- Vahie, A., & Paswan, A. (2006). Private label brand image: its relationship with store image and national brand. *International Journal of Retail & Distribution Management*, 34(1), 67-84.
- Wu, P. C. S., Yeh, G. Y., & Hsiao, C. R. (2011). The effect of store image and service quality on brand image and purchase intention for private label brands. *Australasian Marketing Journal*, 19(1), 30-39.
- Zeithaml, V.A. (1988). Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence. *Journal of Marketing*, 52(3). 48-62.

Why Repeat the Failed Experiment? The Logic & the Economic Cost of the Note Ban

Jiten Kumar Mishra*

Abstract

Demonetization is not new in India. Though twice tried earlier and failed, it was of late attempted again for the third time to fight black money, corruption and counterfeit currency. The recent note ban was however unique and unprecedented unlike the previous experiments owing to several factors. One major difference was its devastating impact on the lives of millions of people across our country. The acute liquidity crunch literally brought the informal sector of India to a standstill position. The study tries to understand the logic of using the demonetization exercise again, and analyzes its economic cost in the light of data and evidence available. More so, the study examines the arguments of the advocates of demonetization and draws a realistic conclusion with an alternative proposal. It questions if the government could have avoided this painful exercise and done it differently to achieve the goals it desired.

Keywords: Note Ban, Black Money, Demonetization, Currency Withdrawal, Counterfeit Notes.

Introduction

The abrupt announcement on 8 November 2016 to scrap all 500 and 1000 rupee notes, more than 86% of our currency, at one go with no sign of hyperinflation or currency devaluation, or even a war like situation was quite unprecedented and shocking for millions of people across our nation. The notes on which the majority of our populace

depended on for their daily livelihood got invalid overnight. The mayhem it caused in the country was indeed immense. Though demonetization was twice experimented in the past in 1946 and later in 1978, none of them had caused so much pain to the common man. High value currency notes of 1000, 5000 and 10000 rupees were scrapped in both instances to curb black money and corruption. The history of Reserve Bank of India (RBI) and the media coverage clearly indicated that both the experiments had failed miserably to achieve the desired results (Shankaran, 2016). In fact, Sir Chintaman Deshmukh and Dr.I.G.Patel, the sitting governors of RBI during 1946 and 1978 respectively, were both skeptical of demonetization to control black money in the economy (Shankaran, 2016). Even recently, the report on measures to tackle black money (2012) by a committee of the Central Board of Direct Taxes noted the criticism of the experts on the failure of past demonetization experiments to fulfill its intended objectives. It said that currency ban could not be a solution to tackle black money menace. Less than 15% of the high value notes were only exchanged during the previous note bans and the rest never reached the banks, the report said. Interestingly, the National Institute of Public Finance and Policy (NIPFP) had estimated black money to be Rs.11870 crores in 1975-76 and post demonetization, in 1980-81, its estimation rose to Rs.23678 crores. This again indicated the utter failure of note ban to curb the black money. Unlike the recent note ban, both the earlier experiments had affected the affluent class only as the majority of the people did not have the financial capacity to have the high value

* PhD (Management) Research Scholar, Jagan Nath University, Jhajjar, Haryana.

currencies. Despite the past failures and the visible pain of the common man due to the recent note ban, we would not draw any conclusions straight away. Rather, this study will examine the logic of imposing the same experiment again and analyze its economic cost based on data and evidences available so far.

Research Methodology

This is a theoretical and descriptive type study based on the secondary data extracted from a number of published sources such as the documents and the White Papers of the government, international bodies, and think tanks; the articles and other publications of the economists, scholars, and the experts; as well as the data from both print and electronic media.

The Rationale of Demonetization

A. Preliminary Comments

India is basically a cash-based economy. The 2015 study of PricewaterhouseCoopers reported that 68% and 98% of the total transactions in India by value and volume respectively are done in cash (Jain, 2016). Therefore, the cash crunch created by demonetization, as it wiped out a substantial part of our currency, shattered the entire gamut of economic activities particularly those of the informal sector. The excessively slow supply of the new currency, the non-functional state of the automated teller machines mainly due to the smaller size of the new denominations, caused enormous pain and misery to the ordinary citizens of the country. So much so that more than 100 persons from across the country lost their precious lives. More than 93% of the workforce that worked in the informal sector was unable to receive their meager wages as their employers did not have cash to pay them and thousands among them even lost their jobs. Innumerable small businesses that bought raw materials, sold products, and did all transactions in cash faced heavy loss of revenue and virtually collapsed. Clearly, the lives of lower middle class and the poor became distressing though the upper strata of society did not face much inconvenience due to their easy access to electronic transactions. It became evident that the informal sector that contributed almost half of India's gross domestic product (GDP), along with the people employed therein suffered the most.

Obviously, question arises if the government with all its highly qualified advisors envisaged the

magnitude of the demonetization impact on economy and the lives of common man. Quite likely, the government understood the potential difficulties as it was hinted in the Prime Minister's address to the nation. What was the logic then to take such a risky step? Well, the same old objectives were repeated. The Prime Minister stated that it was to fight against corruption and black money, and the counterfeit currency used by the terrorists. The government probably assumed to confiscate large sums of money that would justify invalidating a substantial part of our currency. The study will examine if demonetization was indeed a logical step keeping its transaction cost in view and if it fulfilled the objectives as desired.

B. Black Money & Counterfeit Currency

No one disagrees on the need to eliminate black money from our economy. The question is if demonetization was able curb the illicit money or destroyed it partly. The World Bank had estimated in 2007 the size of the black economy to be 23.2% of India's GDP. The researchers of NIPFP later estimated the unaccounted GDP (2011-12) to be of 25.4% of Indian economy (Mukherjee & Rao, 2015). So, approximate calculation of 25% of India's nominal GDP of Rs.135 lakh crores (2015-16) is about Rs.34 lakh crores that seemed to be unaccounted. Numerous studies suggest that the unaccounted wealth consisted of real estate, gold, jewellery, part of it sent out of country through illegal channels and laundered in tax free havens and some cash stored clandestinely within the country. The cash component stored in the country is however miniscule, at best about 6% of the total black money (Harriss-White, 2017). Though the exact cash percentage is unknown, there is agreement among the researchers of its small share in the black wealth. Even, a study on behalf of the Ministry of Finance (2012) found that cash is the least preferred medium of storing black money due to its negative rate of return (Rai, 2016). There is no data or evidence so far to suggest that the recent demonetization was able to drastically reduce the expanse of the unaccounted money of this enormous size or at least unearthed a sizeable part of it.

RBI's press release of 13 December 2016 stated it had received back Rs.12.44 lakh crores of the scrapped notes until 10 December. This is more than 80% of the total Rs.15.44 lakh crores of the currency ceased to be legal tender, as reported to Parliament by MoS Finance AR Meghwal. A few weeks later, in January 2017, both the Press Trust of India (Nair, 2017) and Bloomberg (Singh &

Pradhan, 2017) reported that RBI had already received back 97% of the invalidated currency by 30 December 2016. Though these media reports were never confirmed by RBI, the figures did not seem to be unbelievable as 80% of the banned notes had already been returned almost three weeks earlier. Later, the Economics Times reported on 14 January 2017 that “RBI’s Own Figures Indicate Return of 15 Lakh Crore of Banned Notes” and explained the details of its calculation. Evidently, the majority of the scrapped notes had returned back to the banking system. It at once demolished the government’s earlier proposition that a sizeable part of the black money would be smothered out of the banking system through demonetization. It also crushed the hope of the government of a windfall gain which would result from RBI’s reduction of liability on account of non-return of a good number of scrapped notes and eventual transfer of dividends to it. Ironically, while defending the government in a public interest litigation (PIL) against the note ban, the Attorney General had told Supreme Court that the government expected to unearth about Rs.4-5 lakh core of black money in the demonetization exercise (Vyas, 2016). The return of the majority of scrapped notes to the banks however did not signify that there was no black money in the deposits. It simply meant that those who hoarded it were cunning enough either to exchange it, or convert it to other assets, or even to push it into the banking system through others without getting caught. Its clear evidences are the raids and the seizure of substantial amounts of the new currency, the suspension of numerous bank officials, the large

amount of deposits in the Jan Dhan and other no-frill accounts and so on. Though the government claimed that the tax department would investigate all the suspicious deposits, yet it seemed to be extremely difficult due to the voluminous number of the transactions and the limited infrastructure of the investigating agencies. Even if it happened eventually, the demonetization drive in that case would be at best regarded as a one-time tax exercise.

The government in fact cited in its reply, the five year data from 2012-13 to 2015-16, of undisclosed assets search and seizure statistics of the Department of Revenue. The data revealed that the assets confiscated every year ranged from only 5.6% to 7.5% of the total undisclosed income of the corresponding year (Bose & Dasgupta, 2016). The cash component of the seized assets most probably would have been a miniscule percentage. However, no separate evidence was given to the court to show the proportion of seized cash or if there was any increase in cash hoardings over the years. Even if, one assumed that the unaccounted cash would have been a substantial proportion of the undisclosed assets seized, the amount would be at best in the range of a few hundred crores. In fact, the search and seizure statistics of 2006-2012 cited in the White Paper on Black Money (2012) prepared by the Finance Ministry revealed that the amount of annual cash seizures ranged from 3.7% to 7.4% of the corresponding annual undisclosed wealth. The question is how would the government justify scrapping of Rs.15.44 lakh crores to unearth the black cash of only a few hundred crores?

Table 1: Search and Seizure Statistics

Year	Number of Groups Searched	Total Assets Seized (Rs. Crore)	Undisclosed Income Admitted u/s 132(4) of the Income Tax Act (Rs. Crore)	Proportion of Assets Seized to Undisclosed Income (%)
2012-13	422	575.08	10291.61	5.6
2013-14	569	807.84	10791.63	7.5
2014-15	545	761.7	10288.05	7.4
2016-16*	445	712.68	11066.24	6.4

(Taken from the Article of Bose & Dasgupta, 2016) *Provisional Figures

Original Source: Department of Revenue (Cited in Govt. Affidavit to Supreme Court)

Apart from the cash hoardings, the other important aspect to ponder is about the routine generation of black money accomplished through numerous illegal ways viz. corruption, tax evasion, fictitious transactions and assets, manipulation of accounts

etc. To understand if demonetization was effective to curb the process of generation of black money, we are inclined to float a few questions. First, could the simple note ban capture the complex loopholes in our systems that are discreetly used to generate

illicit wealth? Could this experiment seal those loopholes in the system that is constantly abused by the tax evader? Even, the hard core proponents of demonetization would admit that nothing short of comprehensive structural reforms could give a halt to the process of generation of black wealth on a long term basis.

The other objective of demonetization was to eliminate counterfeit currency used by the terrorists. Again, responding in one of the PILs against demonetization, the government affidavit before the Supreme Court cited the 2016 study of Indian Statistical Institute and declared that the value of Fake Indian Currency Notes (FICN) in circulation was about Rs.400 crores approximately

and the amount remained somewhat unchanged for the last few years (Bose & Dasgupta, 2016). Clearly, the amount of fake notes reported is a very miniscule percentage of the huge amount of currency scrapped by the government. It literally meant that the currency invalidation exercise aimed to cancel about two dozen fake ones among a lakh of currency notes. Does not it sound utterly irrational? The following diagram based on RBI annual reports portrayed clearly that there was hardly any growth of fake currency during the last few years. Surely then, demonetization could not be considered as a prudent decision nor could it be the only option to annul a meager volume of counterfeit notes.

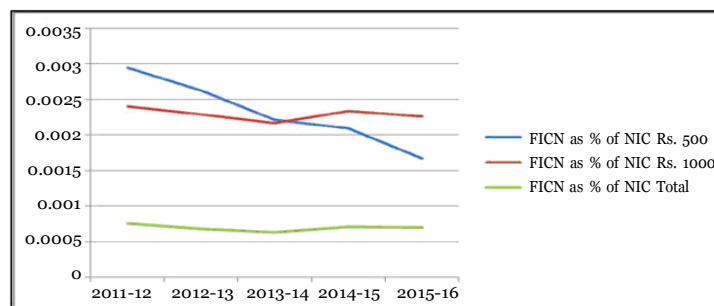


Figure 1: FICN as % of Notes in Circulation (NIC)

(Taken from the Article of Bose & Dasgupta, 2016)

Original Source: RBI Annual Reports

There has been widespread media coverage quoting the intelligence sources that the cash crunch had badly hit the operations of the hawala agents, terrorism related violence and the left-wing extremism. Though the sudden note ban crippled all these nefarious activities that thrived predominantly on dirty money and fake currency, their recommencement is only a matter of time. The criminals would be back in business with the fake version of the new currencies as soon as the masterminds get access to the new technology. In fact, the introduction of Rs.2000 note would make it rather easier for them to store high volume of cash more conveniently.

Findings

A. Growth Projections

Most of the international agencies such as the World Bank, International Monetary Fund (IMF), and the European Union initially welcomed the

demonetization initiative of our government to curb black money and corruption. However, the IMF, World Bank, and the Asian Development Bank (ADB) acknowledged the negative impact of the cash crunch though they claimed that the slowdown of the Indian economy would remain only short-lived. In October 2016, IMF had projected 7.6% GDP growth for India in 2016-17 whereas post demonetization in its dossier on "A Shifting Global Economic Landscape" it cited a lower projections of 6.6% growth for the said year due to sharp decline in business and private consumption. Similarly, both World Bank (Pasricha, 2017) and ADB (Mishra, 2016) lowered their growth projections for Indian economy in 2016-17 to 7% only. The World Bank cited decline of manufacturing, private investment, credit and consumption for cutting down the growth rate. Several other rating agencies also downgraded India's GDP growth rate for 2016-17 as shown in the graph below.

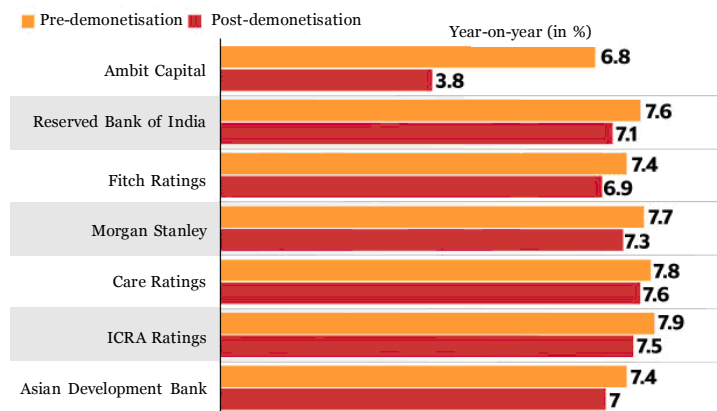


Figure 2: GDP Growth Projections for India in FY 17

(Taken from the article of Mishra, 2016)

Original Source: Live Mint Research

B. Cost & Benefit Analysis

To understand the economic implications of demonetization, it would be necessary to study both its cost and benefits to the nation. The Centre of Monitoring Indian Economy (CMIE), an Indian independent think-tank, studied the demonetization exercise and made a conservative estimation as it claimed, of its transaction cost. It estimated the loss of wages of all those who stood in queue for hours and days to get cash, the cost of printing and transportation of new currencies, the operational overheads of banks for overworking and recalibration of ATMs, the loss of business revenues based on calculation of trade bodies, and quoted the transaction cost of the 50-days demonetization exercise to be a massive 1.28 lakh crore rupees (Vyas, 2016). Mahesh Vyas, the Managing Director of CMIE, said that the study had narrowed down the calculation of the transaction cost to the 50-day period only until 30 December 2016 though the effect of the liquidity crunch, business dislocation and loss of consumer confidence would be felt for a longer period. Further, in a separate study, CMIE stated that the steep fall of automobile sales by about 18% and the statements of numerous FMCG and consumer durable companies on loss of their sales and production cuts amply testified the consumption disruptions in the economy (VyasA, 2017). It stated that since most of the cuts were in non-essential commodities, therefore it might not be easy for the consumption level to return back to normalcy unless liquidity was restored fully; and the consumers regained their confidence by beginning to spend. CMIE projected in another

study the downturn of Indian economy for a longer period, and its GDP to slide to 6% not only in 2016-17 but also to continue to remain so in the next five years (VyasB, 2017). The CMIE projection is actually much lower than those of IMF, World Bank and ADB. CMIE studies reported that the sharp reduction in private final consumption expenditure (PFCE) from 7.5% in 2015-16 to its projected estimation of 5.5% for 2016-17 and its negative impact on investments would slow down the growth of the economy for a longer period.

The advocates of demonetization have however put forth several arguments as its benefits to Indian economy. First, demonetization forced most of the banned currency that included the unaccounted cash, to return to the banking system and this would eventually broaden the tax base, improve government revenues, leading to higher allocation to social programs. Second, the cash crunch and the government incentives for digital payments inspired the people to resort to technology and electronic transactions, and the country has been gradually moving towards a formal economy which would bring about greater transparency, higher tax compliance and GDP growth. Third, the idea of demonetization was to change the mindset of people and it may succeed if followed up with other actions to fight corruption, and to promote financial inclusion (Rogoff, 2016). Fourth, India's cash in circulation (CIC) to GDP ratio is high at 12.25% (Mukherjee, 2016) as compared to many other nations and demonetization would help reduce the ratio which would be conducive for moving towards a developed economy. Though there is no dearth of publications on the benefits of demonetization

though they are less in number compared to those citing its flaws. However, since we looked for neutral and objective arguments and avoided biased and subjective opinions, therefore it became a little difficult for us to find more number of arguments. To be fair, we analyze these benefits argued before reaching to conclusions.

First, demonetization did force all banned notes to return to banking system and the cash-strapped banks got a relief, and even their lending interest rates got reduced. But then, the banks are unsure if the cash would remain in the system for long and if it remained, for how long? Further, the funds lying in many accounts actually do not belong to the account holders, making withdrawal a more likely possibility. Hence, with such uncertainty, the high non-performing assets (NPAs), and tepid appetite for borrowing in the market, banks would not be able to increase their lending significantly regardless of their low interest rates. As regards tax revenues, though extremely difficult, it may be possible for the tax department to penalize certain number of deposits in the time to come. However, with weak capital base of the banks, the decision to park extra funds with RBI or in government securities with low return or pursuing both partially would all depend on a host of factors including government's borrowing capacity for its social schemes and other purposes. By the way, how can the government justify the forceful capitalization of banks by the money of the people particularly the poor who struggled from dawn to dusk to meet his daily needs?

Second, the cash crunch forced the people to adopt digital payment options. As a consequence, the business of digital payment companies got multiplied by several hundred percent overnight which may be good for the economy to some extent. However, the government's vigorous push to use less cash and embrace the digital payments, though laudable, seemed to be premature due to lack of required digital infrastructure, large unbanked population, poverty and illiteracy, lack of training and awareness and many more crucial factors. Interestingly, the RBI data revealed that compared with last December, the number of digital transaction fell in January by almost 15% and continued to fall further in February. So, digital transactions of February were about 25% less than that of December 2016. This indicated that people preferred cash due to various reasons. Low cost, minimum book-keeping, swift realization, compulsion due to meager profit margins, privacy and security concerns were among the main

reasons of using cash. Therefore, to treat all cash dealings as black may be totally erroneous.

Anyway, movement towards less cash or formal economy may not reduce corruption and generation of black money automatically unless it is accompanied by reforms in taxation, cyber security, privacy protection, labour and commodity market, work contracts and other related areas especially of the informal sector. Any premature and forceful action to digitalize everything in a short span of time without preparation, training and robust supporting infrastructure for security and privacy protection of citizens would not only yield insignificant results but also take a toll on the health of our economy. Hasty actions would only make the government more vulnerable resulting in ceaseless amendments, likelihood of failure and loss of credibility.

Third, though demonetization sent a strong message to tax evaders, but the duration of its impact would depend on other supplementary measures to tackle the menace of black money generation and fake currency. Fourth, it is unclear whether low CIC to GDP ratio could really be the mark of a developed economy as there were countries like Japan, Switzerland, and Hong Kong having higher or similar ratios as India and yet scored high on World Bank rankings for ease of doing business and regulatory compliance (Mukherjee, 2016). Further, arguing that India's CIC to GDP ratio is high and then implying its impact to its black economy and corruption may also be fallacious as cash intensive economies are not necessarily corrupt. The clear evidences are again the above three countries with low corruption level as per the 2015 corruption perception index of Transparency International. The size of black economy of these countries is also much smaller than that of India. Conversely, South Africa, Brazil, and Mexico have high corruption despite their low CIC to GDP ratios and the size of their shadow economies is bigger than that of India (Kohli & Ramakumar, 2016). Further, the Deutsche Bank study of 2016 also indicated that high share of cash payments did not necessarily indicate a large shadow economy of a country (Kohli & Ramakumar, 2016).

Conclusion

Over the last few months, the print and electronic media, the newspapers, and magazines have been flooded with data related to demonetization and its impact on the economy. As observed, there are

no two opinions among the experts on the short term negative impact on the economy. The studies are unanimous that note ban caused significant damage to the informal sector which may take sometime to recover. Media is full of stories on the sad plight of small businesses, farmers, daily wagers, and small service providers. However, in the absence of precise data on the informal sector, it would not be appropriate to comment on the magnitude of damage caused to it. The views of the experts vary as regards the duration of the negative impact as well. The implications will be clearer after completion of remonetization exercise within a few months time.

It is rather strange that RBI has not yet disclosed the final amount of the scrapped currency deposited in the banks during demonetization. It has asked for more time to provide the information in response to the query of Public Accounts Committee. However, it is likely that total deposits were close to Rs.15 lakh crores as calculated by the analysts based on RBI's own figures released periodically. If this is the case, then where is the large amount of black cash that was claimed to be smothered out of banking system? Though it is wrong to argue that there was no black cash in these deposits, yet the truth is there is no data so far as to how much black cash was unearthed and wiped out finally. What looks clear however is that the government machinery was either ill prepared or under equipped to detect the wrongdoings swiftly. Whatever is the case, given this experience of unpreparedness, the limited infrastructure of the tax department, and the humongous number of banking transactions, time will only tell us the amount of tax revenue collected finally on the unaccounted wealth. With regard to counterfeit currency, post demonetization a positive scenario emerged and that touched the heart of every Indian. Due to cash crunch, there was a massive downturn in violence and the activities of terrorists and the naxalites. However, as discussed, it is a matter of time for the business these criminals to be as usual.

The argument that demonetization relieved the banks from their difficult cash-strapped position does not hold much ground. As the deposits are involuntary, they may not remain for long in the banks after removal of the withdrawal cap. Further, keeping the cash requirements of the economy in view, it is only logical to assume that a reasonable size of deposits would be withdrawn for use in business and other purposes though no one can predict its scale as of now. Though lending rates

are reduced due to surplus funds, yet no substantial benefits are noticed so far in terms of credit expansion.

The government's push for formalization of the economy should not just mean digital transactions and tax. It has to be accompanied with comprehensive reforms covering all crucial issues for the economy particularly for the huge informal sector. However, to be fair, whatever progress is achieved with regard to formalization of economy, no matter how minuscule, should be considered as plus and the sign of an evolving economy. As regards the argument to lower the CIC to GDP ratio, it may be imprudent to act in this direction hastily without understanding how it would affect our cash dominated economy. Besides, there are other macro economic concerns that are more crucial to look into than the CIC to GDP ratio.

As regards the long term impact of demonetization, though opinion is divided among the experts, there is clearly a tilt towards positive effect but noted mostly with the condition that it was dependent on the introduction of supplementary reforms. Most of the international monetary and rating agencies have made positive comments that the Indian economy would bounce back as a result of the reforms initiated by the government. The IMF, World Bank, and the ADB have projected India's GDP growth rate as 7.2%, 7.6% and 7.8% respectively for the year 2017-18. However, since no bigger economy has undertaken demonetization of this magnitude, therefore long term impact seemed to be largely speculative. The government has already taken certain initiatives for disclosure of black money stashed abroad, voluntary declaration of unaccounted money, curbing of fictitious transactions, and for mutual sharing of banking information with various countries. We are hopeful that the government will undertake other required reforms as discussed to effectively fulfill the same objectives it cited, as the goals of demonetization.

Finally, under the above said backdrop, it is apparent that demonetization did not fulfill any of the objectives assigned to it nor was it logical to undertake the failed experiment again in this indiscreet manner. Even for an honest observer, it would be hard to justify the sudden clampdown. Keeping the pain and the misery of the citizens as well as its massive transaction cost in view, can the government claim assertively that invalidating the colossal amount of Rs.15.44 lakh crore was the only way to destroy the limited black money and the meager volume of counterfeit

currency? Did it justify the cost it entailed on the economy? Clearly, the answer is no. As some economists commented, how justifiable is it to use a sledgehammer to kill the rats in the house or to close down the banks for preventing robberies? So, did the government have other options to achieve the objectives it desired? Yes, the government with well thought-out preparation could phase out the old currencies gradually by providing sufficient time to the citizens somewhat like the discontinuation of 500 Euro bill by the European Central Bank. There was absolutely no need of any secrecy. The government could easily scrutinize the suspicious transactions as it is doing right now. In fact, the additional advantage in this case would be the extra time for the tax department to introduce probably some kind of robust mechanism to detect and scrutinize the transactions. Even, the routine unaccounted wealth search and seizure operations of the department of revenue could have been fine-tuned to do the job. How apt is the statement of Prof. Kenneth Rogoff to cite here that the long-term gain of demonetization depended on its implementation not on government's intentions (Karuturi, 2016). Nevertheless, no action engenders only negative outcomes. It is undeniable that demonetization did create some amount of fear in the minds of black money hoarders and could possibly become a deterrent (Chakraborty, 2016) at least on a short term basis. The biggest contribution of demonetization is the bold message it conveyed to the tax evaders that their business will not remain as usual in the time to come and it is now for the government to expedite comprehensive reforms for effective realization of the objectives it originally desired to accomplish.

References

- A Shifting Global Economic Landscape. (2017). An Update of the Key World Economic Outlook Projections: International Monetary Fund, Washington D.C. <https://www.imf.org/external/pubs/ft/weo/2017/update/01/>.
- Bose, Prasenjit., Dasgupta, Zico. (2016). Supreme Court should Frame An 11th Question on Demonetization. DailyO. Open to Opinion. <http://www.dailyo.in/business/supreme-court-eleventh-question-demonetisation-cashless-black-money-modi-fake-notes/story/1/14541.html>.
- Chakraborty, Pinaki. (2016). Demonetization: Cure & Care. National Institute of Public Finance and Policy: An Autonomous Research Institute under the Ministry of Finance. <http://www.nipfp.org.in/blog/2016/11/23/demonetization-cure-and-care/>.
- Dutta, Nabamita., Kar, Saibal., Roy, Sanjukta. (2011). Informal Sector and Corruption: An Empirical Investigation for India. Discussion Paper No.5579. Institute for the Study of Labour, Germany. <http://ftp.iza.org/dp5579.pdf>.
- Harriss-White, Barbara. (2017). Demonetization may have Caused Lasting Damage to Economy. <https://scroll.in/article/827546/demonetisation-may-have-done-permanent-damage-to-india-political-economist-barbara-harriss-white>.
- Jain, Mayank. (2016). The Beginning of the End of Parallel Economy in India. BloombergQuint. <https://www.bloombergquint.com/business/2016/11/09/the-beginning-of-the-end-of-the-parallel-economy-in-india>.
- Kalyani, Muna. (2016). Indian Informal Sector: An Analysis. *International Journal of Managerial Studies and Research*, 4 (1), p.78-85.
- Karuturi, Rhea. (2016). India's Demonetization and the Future. The Stanford Daily. <http://www.stanforddaily.com/2016/12/02/indias-demonetization-and-the-future-2/>.
- Kohli, Vineet., Ramakumar, R. (2016). Economic Rationale of Demonetization. *Economic & Political Weekly*, 51(53). <http://www.epw.in/journal/2016/53/web-exclusives/economic-rationale-%E2%80%98demonetisation%E2%80%99.html>.
- Measures to Tackle Black Money in India and Abroad. (2012). Report of the Committee Headed by Chairman, Central Board of Direct Taxes. Department of Revenue. Ministry of Finance. http://www.itatonline.org/info/wp-content/files/Measures_to_Tackle_Black_Money.pdf.
- Mishra, Asit Ranjan. (2016). Demonetisation Fallout: ADB Reduces India GDP Growth Forecast to 7%. Livemint. <http://www.livemint.com/Politics/Vz3abbBkVLzpUgZK71FbVM/Demonetisation-fallout-ADB-reduces-Indias-growth-forecast.html>.
- Mukherjee, Deep Narayan. (2016). Hype Around Cash-to-GDP Ratio Misses Critical Nuances. BloombergQuint. <https://www.bloombergquint.com/opinion/2016/12/29/hype-around-cash-to-gdp-ratio-misses-critical-nuances>.
- Mukherjee, Sacchidananda., Rao, Kavita. (2015). Unaccounted Income of India: A Methodological Development. National Institute of Public Finance and Policy, New Delhi. <http://www.nipfp.org.in/publications/one-pagers/unaccounted-income-india-methodological-development/>.
- Nair, Nithya. (2017). RBI may have Received Rs.15 Lakh Crore Deposits of Old Notes. <http://www.goodreturns.in/news/2017/01/05/rbi-may-have-received-rs-15-lakh-crore-deposits-old-notes-526205.html>.
- Pasricha, Anjana. (2017). World Bank: India Demonetization Slowdown to be Short-Lived. <http://www.voanews.com/a/world-bank-india-demonetization-slowdown-to-be-short-lived/3674817.html>.
- Rai, Suyash. (2016). Tackling Black Money. National Institute of Public Finance & Policy, New Delhi. <http://nipfp.org.in/blog/2016/11/17/tackling-black-money/>.
- Rogoff, Kenneth. (2016). India's Cash Bonfire is Too Much, Too Soon. Financial Times International Edition. <https://www.ft.com/content/59c3e922-bd72-11e6-8b45-b8b81dd5d080>.

- Shankaran, Sanjiv. (2016). Demonetization in 1946 and 1978: Stories from the Past. <http://blogs.timesofindia.indiatimes.com/cash-flow/demonetization-in-1946-and-1978-stories-from-the-past/>.
- Singh, Siddhartha., Pradhan, Bibhudatta. (2017). India Said to Get 97% Banned Notes in Setback to Graft Crackdown. Bloomberg. <https://www.bloomberg.com/news/articles/2017-01-04/india-said-to-get-97-banned-notes-in-setback-to-graft-crackdown>.
- Vyas, Mahesh. (2016). Transaction Cost of Demonetization Estimated at Rs.1.28 Trillion. Centre for Monitoring Indian Economy Pvt. Ltd. <https://www.cmie.com/kommon/bin/sr.php?kall=warticle&dt=2016-11-21%2015:12:31&msec=360>.
- Vyas, Mahesh. (2017A). Consumption Demand Hit Severely by Demonetization. Centre for Monitoring Indian Economy Pvt. Ltd. <https://www.cmie.com/kommon/bin/sr.php?kall=warticle&dt=2017-01-12%2017:28:45&msec=270>.
- Vyas, Mahesh. (2017B). India's Real GDP Growth to Slip to 6% in 2016-17. Centre for Monitoring Indian Economy Pvt. Ltd. <https://www.cmie.com/kommon/bin/sr.php?kall=warticle&dt=2017-01-12%2017:49:49&msec=646>.
- White Paper on Black Money. Central Board of Direct Taxes (2012). Department of Revenue. Ministry of Finance of the Government of India. http://www.prsindia.org/uploads/media/White%20Paper%20Black%20Money/WhitePaper_BackMoney2012.pdf.

Quantification of Risk Appetite for Young Professionals: An Empirical Study

Abhay Raja* & Niyati Dave**

Abstract

The debate over quantification of risk appetite of investor keeps evolving. As the modern portfolio theory gained prominence, the area has grabbed researchers' interest world over resulting into many significant contributions made so far. However, this area needs exploration in Indian context to add to the existing body of knowledge.

This paper is an attempt to contribute in this direction by developing the instrument for quantification of risk appetite. The final outcome of the study is a questionnaire with twelve items and four factors; 1. Psychological Perspective, 2. Financial Stability Perspective, 3. Societal Perspective, 4. Tendency to Panic. The researchers used Factor Analysis (EFA) to surface dominant factors attributable to quantification of risk appetite. The methodological framework included identification of factors by using anti-image correlations and Varimax Rotated Component Matrix. The sample of 160 young professionals from Rajkot and Ahmedabad were found adequate as per Kaiser-Meyer-Olkin Measure of Sampling Adequacy. As the study pertains to quantification of complex behavioral aspect, Chronbach's Alpha of fifty percent was considered satisfactory.

The researchers believe that the study will predominantly facilitate Portfolio Management Services (PMS) to categorize investors based on their risk appetite. This would also be of relevance for Asset Management Companies (AMCs) to

structure the schemes according to the risk profile of the investors.

Key Words: *Portfolio Management Services, Risk Appetite, Behavioral Finance, Quantification of Risk, Attributes.*

Introduction

With the increasing importance of wealth management in India, many unsophisticated investors need to make sound investment decisions. Understanding risk tolerance has always attracted financial service providers and consumers. The tendency towards risky investment alternative and hence risk tolerance is escalating. Snelbecker, Roszkowski, & Cutler (1990) cited that risk tolerance is an important factor that influences a wide range of personal financial decisions. Understanding risk and risk tolerance is essential in apt portfolio management. Choosing a portfolio not consistent with risk tolerance capacity may result in investor disappointment.

Despite its importance in the financial services industry; there remain some unresolved questions with respect to the "determinants" of risk tolerance. Factors like homogeneity of risk amongst investors, investment and age, home country bias of investors, investors, and wealth etc. have been researched. In spite of the fact that a number of factors have been proposed and tested, a brief survey of the results reveals a distinct lack of consensus. As Haliassos and Bertaut (1995) inferred, "the current

* Associate Professor, Ph.D., Shanti Business School, Ahmedabad, Gujarat, drabhayraja@gmail.com

** Assistant Professor, Institute of Management, Nirma University, Ahmedabad, Gujarat, niyatidave7@gmail.com

body of theoretical literature does not adequately describe the behavior of individual investors". According to risk-tolerance researchers (e.g. Droms, 1988) and financial planning practitioners (e.g. Opiela, 1996), the ongoing problem of personal finance is absence of well documented and accepted instrument for risk assessment. However, considerable attempts are made to address this research gap, but systematic efforts are yet to be put, especially in Indian context with well diversified individual profiling.

In recent years, investment managers, portfolio managers, financial planner and researchers have taken an improved interest in understanding investor risk tolerance. Much of this interest has evolved because of advances in the conceptualization of investment management models. Modern investment decision making models require investment managers to use, at a minimum, four factors as inputs into the development of financial and investment plans. These inputs include investors': (a) goals, (b) time horizon, (c) financial stability, and (d) risk tolerance (Garman & Fogue, 1997; Hallman & Rosenbloom, 1987; Trone, Allbright & Taylor, 1996).

Risk tolerance and risk appetite are seemingly similar phrases. Researchers, for the purpose of this study present different view points for similar phenomena. Risk tolerance is individual's capacity to accept loss on the event of market crash (i.e. the point where investor says, "enough"). Risk appetite is individual's willingness to take risk with anticipation of generating superior returns. This study is designed to address the phenomenon of risk appetite. However, the studies measuring risk tolerance are also of immense help for this study.

Thus quantification of risk appetite becomes a key importance. The multi-dimensional nature of risk appetite makes it a challenge to measure. Although the importance of accurately assessing the financial risk and its appetite is well documented, the practice remains not so accurate due to the very subjective nature of risk taking. The purpose of this study is to present research findings that attempts to quantify risk appetite which would facilitate professional portfolio managers for decision making with respect to allocation in risky assets vis-à-vis risk profile of the investors.

Literature Review

Majority of the literature review encompasses works of authors who have surfaced various dimensions pertaining to risk tolerance, risk appetite and various investment decisions.

Kogan and Wallach (1964) designed the questionnaire to assess risk preferences through the use of hypothetical scenarios. Twelve items using an open-response format, it stated that risk tolerance is the willingness of an individual to engage in a behavior where there is a desirable goal but attainment of the goal is uncertain and accompanied by the possibility of loss.

Cutler (1995) classified as "myth" the idea that financial risk tolerance is a simple one-dimensional attribute. According to Cordell (2001), risk tolerance is multi-faceted. It is a function of propensity, attitude, capacity, and knowledge. Of these, attitude and capacity are most significant.

Using a sample of white collar clerical 220 workers Grable & Joo (2000) determined that financial knowledge, income, education, ethnic background, financial solvency, number of dependency & home township can be used to predict a personal financial risk tolerance.

Demographics play important role in determining risk appetite. Studies have revealed that women are more conservative than men, and this difference is attributed to a personality trait in men referred to as "thrill seeker or sensation seeker" (Roszkowski, Snelbecker & Leimberg, 1993)

Hanna, Gutter & Fan (2001) mentioned that there are at least four methods of measuring risk tolerance: asking about investment choices, asking a combination of investment and subjective questions, assessing actual behavior, and asking hypothetical questions with carefully specified scenarios.

Weber, Blais, and Betz (2002) conceptualized a person's attitude toward taking financial risks to include risk perception and attitude toward perceived risk.

Corter & Chen (2006) investigated a new instrument designed to assess investment risk tolerance, the Risk Tolerance Questionnaire (RTQ). The study showed that RTQ scores were positively correlated with scores on two other investment risk measures, but were not correlated with a measure of sensation-seeking which was in line with Zuckerman (1994) suggesting that investment risk tolerance is not explainable by a general cross-domain appetite for risk.

Sulaiman (2012) in his paper has contradicted the belief that financial risk tolerance of individual investors decreases with their age. He has taken several demographic factors like marital status, formal education, income etc. to measure the risk tolerance.

Sreekumar and Ladha (2014) described key non economic investor characteristics that affect risk tolerance. They inferred that collectivism, religiosity, and environment attitude are the key attributes of Indian investors that influence their pursuit of non-economic investment goals.

Cooper, Kingyens, and Paradi (2014) characterized risk by its four distinct elements; propensity, attitude, capacity, and knowledge. Over 180 individuals were surveyed and their responses were analyzed to confer results that the multidimensionality of risk must be considered for complete assessment of risk tolerance.

Geetha and Vimla (2014) studied the association between demographic characteristics and risk taking capacity of the investors. They proved no significant relationship between gender and risk taking capacity of the respondents and significant relationship between educational qualification and risk taking capacity.

Kannadhasan (2015) in his paper has classified 778 retail investors with various investment experiences in terms of financial risk tolerance and risk taking behavior. He has used the demographic factors viz., gender, age, marital status, income, occupation, and education resulting in terms of financial risk tolerance and risk taking behaviour.

Research Methodology

Research objectives	Primary: To facilitate portfolio managers to decide the fund allocation based on risk appetite of young professionals. Secondary: Quantification of Risk Appetite of young professional.
Data collection	Primary
Criteria for sample selection	Questionnaire was sent to only those respondents who were expected to be of less than 45 years of age and minimum graduate. However, responses received not satisfying these criteria were removed from data analysis.
Research design	Sample includes investors from the region of Ahmadabad and Rajkot. (Respondents are young working professionals and investors). Sampling size : 160 investors Sampling method: Convenient and Snowball Sampling Instrument used for data analysis: Factor Analysis (EFA) Rationale for EFA: Research intended to determine the number of latent constructs underlying a set of items that defined risk quantification. Being a variable reduction technique, research aimed at finding the factors affecting the choice of investment depending on the risk.

Table 1: Demographic Profile of Respondents

Age Group	20-30		31-45		Total
Responses	91		69		160
Education	Less than Graduate	Graduate	Post Graduate	More than Post Graduate	
Responses	0	13	96	51	160
Monthly Income	Less than 25000	between 26000 to 50000	between 51000 to 100000	greater than 100000	
Responses	35	69	27	29	160
No. of Dependent Family Members	Less than 2	2 to 3	4	more than 4	
Responses	64	53	32	11	160
Residence	Ahmedabad		Rajkot		
	91		69		160

Data Analysis and Interpretation

Pertaining to the objective of quantification of risk appetite of the young professionals, the detailed questionnaire was constructed. The researchers defined young investors with the age of less than 45 years. The respondents were selected based on this criterion. However, further bifurcation is also made where 91 respondents were found to be in the age range of 20-30 years and 69 respondents were from the age range of 31-45 years. This bifurcation was made to extend the scope of study in future. By professional, researchers defined minimum graduate as their qualification. Table – 1 exhibits the demographic profile of the respondents.

Factor analysis was used for data reduction and factorization. The process pursued for scale development was as follows: Initially the tool (questionnaire) of twenty eight items was constructed to quantify the risk appetite of the

investors. Scores were generated for all the items in the questionnaire to perform appropriate analysis. The factor analysis was applied on the responses received. Applying the criterion of fifty percent anti-image correlation, the items with lower correlations were removed from the tool. The items with cross loading in rotated component matrix were also deleted from the tool.

As the researchers are keen on producing a questionnaire with comparatively higher accuracy and reliability, the Cronbach Alpha was used for reliability test. In that process the items which were making the instrument less reliable were removed to make a final questionnaire with comparatively better reliability and accuracy. Since the study intends to map the qualitative phenomenon of risk appetite, fifty percent reliability was considered to be quite satisfactory.

The final instrument for quantification of risk appetite was a questionnaire with twelve questions bifurcated in four factors.

Table 2: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.668
Bartlett's Test of Sphericity	Approx. Chi-Square	115.192
	Sig.	.000

The researchers attempted to ensure the heterogeneity of the samples included while having the study. The sampling adequacy of 66.8 percent was found satisfactory considering the heterogeneity of the respondents. The Bartlett's Test of Sphericity was used to prove the presence of correlations among variables. Null hypothesis was rejected to arrive at a conclusion of presence of correlations among variables.

The VARIMAX – rotated component analysis factor matrix is shown in Table – 2. The total amount of variance extracted was 58.6 percent which explains the level of confidence of the results.

Factor 1: Psychological Perspective

Psychological perspective for risk measures the readiness to sacrifice for investment. This includes four variables; Variable 17 (0.860), Variable 11 (0.582), Variable 27 (0.507) and Variable 2 (0.501). Investment can also be synonymic with the phrase “postponement of consumption” which requires an immediate sacrifice. Its general belief that the

risk lover investor will be ready to accept more postponement and risk averse investor will be having a limited tendency for postponement.

Factor 2: Financial Stability Perspective

Financial stability perspective attempts to measure the inclination of investor for financial stability. This factor includes four variables; Variable 6 (0.685), Variable 19 (0.662), Variable 22 (0.602) and Variable 12 (0.593). The foremost objective of any investment is always safety of principal. The investor more inclined for financial stability will be more concerned about risk (risk averse investors). On the flip side, risk lover will not be so much concerned about financial stability.

Factor 3: Societal Perspective

Societal perspective represents the investors' decision making based on their thinking from societal view point. This factor includes two variables; Variable 1 (0.860) and Variable 3 (0.758). Several times, people tend to take decisions

Table 3: VARIMAX Rotated Component Matrix

Rotated Component Matrix*					
	Component				Communalities
	Factor 1	Factor 2	Factor 3	Factor 4	
VAR00017	.860				.753
VAR00011	.582				.643
VAR00027	.507				.424
VAR00002	.501				.355
VAR00006		.685			.578
VAR00019		.662			.586
VAR00022		.602			.401
VAR00012		.593			.552
VAR00001			.860		.778
VAR00003			.758		.693
VAR00026				.753	.663
VAR00024				.747	.602
					Total
Eigen Values	2.824	1.582	1.421	1.200	7.027
% of Variance	23.531	13.184	11.845	9.997	58.557
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					

* Factor loadings less than 0.50 have not been displayed

based on their comfort zone in society. This types of investors are risk averse investors. Investors who do not bother about such societal perspective are risk lover investors.

Factor 4: Tendency to Panic

Tendency to panic elaborates the response of investor while facing loss. This includes two

variables; Variable 26 (0.753) and Variable 24 (0.747). Panic is a perfect psychological factor resulting into erratic decision out of indecisive situation. It was observed several times that investors tend to lose potential gains in tendency of panic. This kind of investors are risk averse while risk lover investors would stay calm at the time of panic or create more long positions lower down the average cost of investment.

Table 4: Reliability Statistics

Reliability Statistics	
	Cronbach's Alpha
Factor 1	.597
Factor 2	.549
Factor 3	.586
Factor 4	.520

The study pertains to the area of behavioral finance where the individual's responses will be based on so many identifiable and non identifiable factors. The researchers set the target of having 50 percent reliability as satisfactory. All four factors were checked for acceptable and satisfactory reliability scores of more than 50 percent.

The final questionnaire consists of twelve items having total score of 47. Based on the responses that we have received and the mathematical tools like, average, standard deviation, minimum and maximum we present the summary for the scoring of risk appetite in Table – 5.

Table 5: Score of Risk Appetite and Fund Allocation

Score of Risk Appetite	Percentage of fund allocation in risky assets
15-20	20%-35%
21-25	35%-50%
26-30	50%-60%
31-35	60%-70%
35-40	70%-80%
40 and above	More than 80%

Conclusion

One of the most important decisions of portfolio manager is to bifurcate the funds among risky and risk free assets. This study brings forth the instrument for quantifying risk appetite of the investor. We strongly believe that the questionnaire designed as the outcome of this study will help portfolio managers to take this decision based on risk appetite of their clients. However, the researchers are well aware with the fact that the sample size of the study includes respondents from Rajkot and Ahmedabad only. Simultaneously it included young professional respondents only. But this instrument for quantification of risk appetite is open for verification and validation with other investors also. The researchers are keen on extending this study in future in line with extending the scope of the study.

References

- Cooper W.W., Kingyens, A.T., Paradi, J.C. (2014), Two-stage financial risk tolerance assessment using data envelopment analysis, *European Journal of Operational Research*, 233, 273–280
- Corter & Chen. (2006). Do investment risk tolerance attitudes predict portfolio risk? *Journal of Business and Psychology*. 20(3), 369–381.
- Cordell, D.M. (2001). Riskpack: How to evaluate risk tolerance? *Journal of Financial Planning*. 36 – 40.
- Cutler, N.E. (1995). Three myths of risk tolerance: what clients are not telling you. *Journal of the American Society of CLU & ChFC*. 49, 33 – 37.
- Droms, W. G. (1988). Measuring investor risk capacity with a pass. *Journal of Financial Planning*. 1, 88–92.
- Garman, E. T. & Fogue, R. E. (1997). *Personal finance (5th ed.)*. Boston: Houghton Mifflin
- Geetha, S.N. and Vimala, K. (2014). *Procedia Economics and Finance* 11, 360 – 374
- Grable, J.E. and Joo, S.H. (2000). A Cross-Disciplinary Examination of Financial Risk Tolerance. *Consumer Interests Annual*. 46, 1-7.
- Haliassos, M. & Bertaut, C. C. (1995). Why do so few hold stocks? *The Economic Journal*, 105, 1110–1129.
- Hallman, G. V. & Rosenbloom, J. S. (1987). *Personal financial planning (4th ed.)*. New York: McGraw-Hill.
- Hanna, S.D., Gutter, M.S., and Fan, J.X. (2001). A measure of risk tolerance based on economic theory. *Association for Financial Counseling and Planning Education*. 12(2), 53 – 60.
- Kogan, N. & Wallach, M. A. (1964). Risk taking: A study in cognition and personality. *Journal of Personality and Social Psychology*. 9(1), 101-106.
- Kannadhasan, M. (2015). Retail investors' financial risk tolerance and their risk-taking behaviour: The role of demographics as differentiating and classifying factors. *IIMB Management Review*. 27, 175–184
- Opiela, N. (1996). Business practice management: Charles Haines. Jr. *Registered Investment Adviser*. 2, RIA1, 6.
- Roszkowski, M. J., Snelbecker, G. E., & Leimberg, S. R. (1993). Risk tolerance and risk aversion. *The tools and techniques of financial planning*. 4, 213–225
- Snelbecker, G. E., Roszkowski, M. J., & Cutler, N. E. (1990). Investors' risk tolerance and return aspirations, and financial advisors' interpretations: A conceptual model and exploratory data. *The Journal of Behavioral Economics*. 19, 377–393.
- Sreekumar, A., Ladha, N.R. (2014). Determinants of non-economic investment goals among Indian

- investors. *Corporate Governance*, 14 (5), 714 – 727.
- Sulaiman, E.K. (2012). An Empirical Analysis of Financial Risk Tolerance and Demographic Features of Individual Investors, *Procedia Economics and Finance*. 2, 109 – 115
 - Trone, D. B., Allbright, W. R. & Taylor, P. R. (1996). The management of investment decisions. Chicago: Irwin
 - Weber, Blais & Betz (2002). A Domain-specific Risk-attitude Scale: measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making*. Published online at John Wiley & Sons, Ltd. 263-290.
 - Zuckerman, M. (1994). Behavioral expressions and biosocial bases of sensation seeking. *University Press Cambridge*: Cambridge.

Demonetization (8th November 2016): It's Impact without any Prejudice

D.R. Agarwal* & Anshi Goel**

Abstract

The RBI Act empowers the central government to demonetise any series of bank notes, but the government can take this decision only on the recommendation of the RBI (monetary authority of the country). The government and RBI in consultation took the decision to demonetise 86 percent of India's cash in circulation (500 and 1000 rupee bank notes) to tackle endemic corruption and counterfeits used by terrorist and other anti social groups. Parallel economy could be named as black, unaccounted, illegal, unsanctioned economy and its impact are loss of revenue to the state exchequer, consumption of non essential items, investments in unproductive channels like jewellery, bullion, real estate, luxury housing and transfer of funds from India through violation of foreign exchange rules and regulations is an outcome of corruption. The main objective of this paper is to examine the impact of recent demonetisation on the nation's economy through the analysis of secondary data. Normalcy has returned to the currency system post demonetisation on the pace of cash withdrawals has come down. The success of demonetisation is not known to the monetary authority of the country, but it claims that the move of demonetisation was well planned.

Keywords: Sectoral cleanup, wider tax net, Stemming Illicit outflows, Cashless society, Curb Counterfeiting.

Introduction

There are two schools of thought – one given by the Classical Economist and Father of Economics in his masterpiece contribution 'Wealth of Nations' published in the year 1776 – there should be no intervention of any kind by the government in the economic affairs of an economy for its smooth functioning. There was an automatic system of built in flexibility to maintain the equilibrium at the point of full employment in the economy. The basic objective was wealth, more wealth and still more wealth (maximization of wealth). As a result, the working hours of labour were raised without a corresponding increase in their wages, the logic behind the idea was that if workers were paid above the subsistence level, they would multiply and ultimately their wages would be settled at the subsistence level. Under this system, all the resources of the economy are owned, directed, and managed by the private enterprises in order to maximise their profits. Market functioning is based on price mechanism and all economic decisions are taken in accordance with the price mechanism. Private property and law of inheritance are the two key features of this system. However, this system leads to the inequalities in the distribution of economic power because of exploitation of labour in the hands of capitalists. A surplus is generated by the labour and it is appropriated by the capitalists. Society is divided into two groups: haves and have-nots. Trade unions are the product of the system leading to industrial revolution.

* Emeritus Faculty, Ph.D., North Cap University, Gurgaon, Haryana, draggarwal@ncuindia.edu

** Research Scholar, Department of Commerce, Delhi School of Economics, University of Delhi, New Delhi, anshigoel48@gmail.com

Socialistic system is an outcome of the consequences of the capitalistic mode of system. Under this system all the resources of the economy are owned, directed, and managed by the government under the guidance of the plan authority. The government for the maximization of social welfare of the society takes all the economic decisions. Private property and law of inheritance both are missing in this system. The system does not operate on the basis of price mechanism, there are controls and regulations. Resources are channelized in different directions under the guidance of a public authority as per the priorities set under the plan. Both the systems have their own merits and demerits.

After the dawn of independence in the year 1947, the basic problem was the rehabilitation of refugees and breaking the vicious circle of poverty in order to put the economy on the road leading to growth and development. In 1948, Dr. SP Mukerjee (the then Industrial Minister) gave a model of mixed economy that is co existence of both private and public sectors under a common economic plan. The idea was to gain the merits of both the systems of capitalistic as well as socialistic models. With the success story of economic planning in USSR, India also moved on the path of programme of development by launching a series of five year plans and the objectives were to establish a socialistic pattern of society, removal of disparities of income and wealth, eradication of poverty and unemployment, maximization of social welfare and social security to the most disadvantageous section of the society and the most backward regions/areas. Social and economic overheads were created in the public sector in order to motivate direct productive activities. Private sector was neither willing nor capable to carry out the basic infrastructural facilities because of the requirements of huge amount of capital and a sophisticated technology and above all a long gestation period of such projects.

As a result, public sector gained the commanding height in the economy without proving accountability and transparency in the system. The magnitude of black sector in the form of a parallel economy developed with the objectives entirely different from the social and economic objectives. With the expansion of economic activities, magnitude of black sector has grown and it has become a source of power and prestige linked with conspicuous consumption.

Literature Review

“The conspicuous consumption of new black rich, their vulgar display of pomp and opulence, their unlimited accessibility to finance, their nest eggs in various places and countries, their influence in important places, all these are new common knowledge”.¹ To understand the impact of black economy, it is essential to have an estimate of black income over a period of time. Several attempts have been made to quantify black incomes in India based on two approaches:

- Kaldor’s approach of quantifying non salary incomes above the exemption limit of income tax and
- Edgar L. Feige method of working out transaction income on the basis of currency deposit ratio and from it deriving the black income of the economy

(i) Kaldar’s Estimate: N. Kaldor in his report on Indian Tax Reform estimated the non-salary income based on the breakup of national income into (a) wages (b) income of self-employed (c) profit, interest, rent etc.

= Compensation of Employees + Mixed Income + Operating Surplus

= Income from Work + Mixed Income + Income from Property and Entrepreneurship

Non salary income = NDP – Income from Work

The difference between the estimated non-salary income above the exemption limit and the actual non-salary income assessed to measures the size of black income.

(ii) Wanchoo Committee’s Estimate: Direct taxes enquiry committee (Wanchoo committee) followed the method adopted by Kaldor with suitable modification. According to Wanchoo committee estimated income on which tax have been evaded would probably Rs. 700 crore and Rs. 1000 crore for the years 1961-62 and 1965-66 respectively. Projecting this estimate future to 1968-69 on the basis of percentage increase in national income from 1961-62 to 1968-69, the income on which tax was evaded for 1968-69 can be estimated at a figure of Rs. 1800 crore.

(iii) Rangnekar’s Estimate: Dr. DK Rangnekar as member of Wanchoo committee, in his minute of dissent considers the estimate made by the Wanchoo committee as under estimates. The projection of black money for 1968-69 and 1969-

70 were Rs. 2833 crore and Rs. 3080 crore respectively. The compound rate of growth of black income was of the order of 13 percent per annum at current prices, where the compound rate of growth of national income for the same period was 11 percent per annum.

(iv) Chopra's Estimate: The crucial finding of Chopra's study is that after 1973-74, the ratio of unaccounted income to assessable non-salary has gone up, whereas the Wanchoo committee assumed this ratio to be constant. Consequently, after 1973-74, there is wide divergence between the estimates of Wanchoo committee and those of O.P Chopra.

(v) Gupta's study of black income using Feige's method of Transaction-Income ratio:

Poonam Gupta and Sanjeev Gupta have raised some fundamental objections regarding Kaldor's methodology used in estimating black income in India. Since the income generated in the illegal economy is not reported for the calculation of official GNP, the estimate of GNP, which are used as a basis for estimation of black economy are serious under estimates. Gupta made use of Feige method of estimating the magnitude and growth of the black market. Feige assumed that the ratio of total transactions to total income was relatively stable. According to this study, the absolute size of the black income in India increased from Rs. 3034 crore in 1967-68 to Rs. 46867 crore in 1978-79 that is by more than 15 times. The relative share of the black economy was 9.5 percent of GNP in 1967-68 but it has jumped to nearly 49 percent by 1978-79. The study further indicates that 1 percent increase in overall taxes leads to more than 3 percent increase in the black income relative to official economy.

(vi) NIPFP study on black economy in India:

National Institute of Public Finance and Policy conducted a study under the direction of Dr. S Acharya, formerly of the World Bank; Dr. Raja Chelliah was the overall supervisor of the study. The study defines black income as aggregate of incomes, which are taxable but are not reported to tax authorities. It is the extent to which estimates of national income and output are biased downwards because of deliberate false reporting of incomes, output and transactions for tax evasion, flouting of other economic controls and relative motives. NIPFP study concludes "A total black income generation of Rs. 36786 crore or in round number Rs. 37000 crore out of total GDP at factor cost of Rs. 173420 crore seems to be on high side, although it turn out to be less than 30 percent of

GDP as against some extravagant estimates placing it at 50 or even 100 percent of GDP".

(vii) Suraj B. Gupta study of black income:

Dr. Suraj B. Gupta made a guess estimate of black income for three selected years 1980-81, 1983-84, and 1987-88. The estimate reveals that black income was around Rs. 51000 crore in 1980-81 and it shot up to Rs. 85000 crore in 1983-84 and further skyrocketed to Rs. 149297 crore in 1987-88. It would be desirable to calculate black income as proportion of GDP of the non-agricultural sector, since there is no scope for generation of black income in the agricultural sector. The general growth rate of annual black income was somewhat higher than the annual growth rate of real GDP.

(viii) Arun Kumar (Understanding the black economy and black money in India, Aleph Book Company):

The black money in the form of cash was only about 1 percent of the black wealth held in the country and as per official estimates only 3.5 percent of the black income generated in 2016. Not only do a vast majority of Indians, rich and poor, use cash and not credit cards for making daily financial transactions but also businesses need it for working capital to buy raw materials, pay wages and other requirements for production and sales. According to research in 2015, only 22% of adults in India have access to internet. This means vast majority, who do not have access..., will be unable to use banking. Only 17% of Indian has access to mobile phone banking. In a population of 1.3 billion, there are 24.5 million credit cards and 661.8 million debit cards. A large number of Indians do not have access to credit or debit cards. Most small business does not have card readers so cashless economy cannot become a reality overnight. 80 percent of the Rs.500 and Rs.1000 notes was white money used by businesses and citizens.

The creation of a parallel economy as a consequence of the growing proliferation of black money in every sector of economy has been very serious and in number of ways pernicious influences on the working of the Indian economy. The impact of black income could be seen with loss of revenue, consumption of non-essential articles, investment in jewellery and luxury housing, black liquidity and the transfer of funds from India through tax heavens.

It is the parallel economy, which does the backseat driving, while the political leadership acts as the mouthpiece of big business to justify the abolition of controls or introduction of a dual system of

prices in the name of productivity or national interests. It was due to the pernicious impact of black money on Indian economy and polity that the Wanchoo committee concluded, "It is therefore no exaggeration to say that black money is like a cancerous growth in the country's economy, which if not checked in time, is sure to lead to its ruination".²

Objectives

The main objectives of this paper are as follows:

1. To examine the meaning of demonetisation as a measure to curb black money
2. To examine the history of Indian Economy (post independence) in relation to step of demonetisation
3. To examine the impact on the national economy and recent demonetisation dated 8.11.2016
4. To analyse the management aspect of demonetisation

Research Methodology

This paper is based on secondary data taken from authentic and standard sources like various issues of Economic surveys, research papers published in standard national and international journals of report, daily newspapers and reports like direct taxation enquiry committee etc. simple statistical tools have been applied for the analysis of different objectives.

Main Theme

Corruption appears as a factor reflecting deviation from the avowed objectives of the state. According to Rose Ackerman "institution designed to govern the inter-relationships between the citizens and the state are used instead for personal enrichment and the provision of benefits to the corrupt".³

Corruption raises the cost of development; it breeds inefficiency in departments to produce inferior quality goods. Corruption creates black or parallel economy and thus a vicious circle. It is virtually important that corruption should be eliminated or considerably reduced, so that the phenomenon of black economy does not destroy the vitals of the society.

In 2014, the Lok Sabha election was fought mainly on the issue of corruption and development. After coal, 2G Spectrum, common wealth games exposed by CAG and other agencies, the people of India voted for the new government. Under the

stewardship of Prime Minister Narendra Modi, who promised that black money slashed abroad, would be bought back within 100 days of coming to power, but this did not happen due to a number of reasons. If a survey is made for the measures undertaken to unearth black incomes since independence, the principal measures were:

- To check tax evasion (based on the recommendation of various committees and commissions set up by the government in different years)
- Voluntary Disclosure Schemes floated by the government (for converting black money into white on payment of what turned out to be in most cases, a small amount of conscience money)
- Special Bearer Bond Scheme (such efforts as the bearer bond scheme to tackle the problem are only half hearted measures)
- Demonetisation (RBI Act empowers the central government to demonetise any series of bank notes.

However, the government cannot take this decision on its own. The RBI needs to recommend it first. The law provides for a 21 member board including 14 non-official members, but the bank has been operating with less than half the prescribed strength. There are 10 board members at present on the board of RBI).

The basic philosophy of demonetisation is based on the assumption that all black incomes are held in cash, but that is only a small part of the total black incomes, which is held in liquid form. In 1946, demonetisation was resorted to but the direct tax enquiry committee admitted, "Demonetisation was not successful then, because only a very small proportion of total notes in circulation was demonetised (that is 11 percent)". Another demonetisation was attempted in 1978 of high demonetisation notes (Rs. 1000, Rs. 5000 and Rs. 10000 notes) and these notes as on that aggregated to Rs. 146 crore. Notes tendered to RBI amounted to Rs. 125 crore as per data available until August 1981. Demonetisation thus again failed because it could not make a dent on unearthing black money.

Indian economy and its tax base have long been hobbled by a parallel economy running on cash hoarded by people avoiding paying taxes. Use of illicit money is so prevalent that raids on dishonest politicians and businesses regularly turn up people holding crore of rupees in cash, sometimes stashed away in false ceilings and walls. Much of the illicit

money in India is believed to be used in real estate purchases, which make up more than 6 percent of India's 2.3 trillion dollar economy. According to Mumbai based consultants, it has been estimated that 30 percent of these transaction are done with untaxed funds or black money. Successive governments have struggled with under reporting of taxes, seen as a major hurdle in expanding state revenues, as well as growing undisclosed incomes to avoid taxation. A substantial amount of black money is secreted away to account overseas. Moreover, fake bank notes have been a major concern for India, because 250 of every one million bank notes in circulation were fake. The government in consultation process with RBI, as per rules, took a decision on 8th November 2016 to demonetise 86 percent of India's cash circulation

(Rs. 14.2 trillion in currency notes of Rs. 500 and Rs. 1000 was in circulation as on 31st March 2016, according to RBI data).

There are divergent estimates about the black money stashed abroad; some place it is at 10 percent of GDP, some others say that it is equal to 100 percent of GDP (nearly 2 trillion US dollar). CBI places this figure at \$ 500 billion; the US based global financial integrity estimates this to be \$ 440 billion. BJP made the estimates if all that black money stashed returns, and then all Indian would get 15 lakh each.⁴ (That was dubbed to be merely an electoral phrase). Some person blames the rate of taxation for the exponential growth of black money. However, the table given below does not prove this fact.

Table 1: Maximum Marginal Rate of Personal Income Tax-1994

Country	Percent	Country	Percent
India	30.0*	China	45.0
Denmark	65.0	South Korea	45.0
France	56.8	UK	40.0
Germany	53.0	Indonesia	35.0
Sweden	50.0	Brazil	35.0
Japan	50.0	Mexico	30.0
Egypt	48.0	Russia	30.0
USA	47.5	Singapore	30.0

*For 1997-98 onwards

Source: Tata services Ltd., Statistical outlines of India (1996-97)

If we examine the measures (other than demonetisation), taken so far reveals that the government has miserably failed to tackle the problem created by black money. That is why this move of demonetization was a welcome step to eradicate the evil of parallel economy. The ban will help to choke the flow of counterfeit high value bank notes militant groups use to fund their attacks against the country enemies from across the border have run their operations using fake currency notes. The government on 19.12.2016 allowed the use of junked Rs. 500 and Rs. 1000 currency notes until Dec. 30, 2016 for paying tax on disclosures made under the tax evasion amnesty scheme. A holder of unaccounted cash in Rs. 500/1000 notes could deposit half of it (50 percent) in any of the 29

scheduled bank can accept income tax. A quarter of the amount (25 percent) could be deposited in cash in the non-interest rate bearing PMGK Deposit scheme 2016. The remaining 25 percent could be deposited in individual account.

Facts to be Highlighted

1. Total Value of currency notes in circulation in March 2016 = Rs. 16,415 billion

= (47.8% of Rs. 500 + 38.6% of Rs. 1000 + 9.6% of Rs. 100 + 1.2% of Rs. 50 + 0.6% of Rs. 20 + 1.9% of Rs. 10 + 0.3% of Rs. 2 and 5) = 86.4% (Rs. 500 + Rs. 1000) + Rs. 218 billion value of coins in circulation in March 2016

Source: Daily HT 10.11.2016, P-8

2. Black Money Hardly Liquid

Table 2: Black Money Hardly Liquid (All figures in Rs. Crore)

Year	Total Hidden Wealth Seized	Cash Component in hidden wealth	Cash component in percentage
2012-13	10291	465	5
2013-14	10791	607	6
2014-15	10288	586	6
2015-16	11066	532	5
2016-17(31.10.2016)	7700	408	5

Source: Daily HT 12.11.2016, p-6

3. Cash is still king in India

Table 3: Cashless Around the Globe

Name of the Country	Percentage (cashless transactions)
Singapore	61
Netherlands	60
France	59
Sweden	59
Canada	57
Belgium	56
UK	52
USA	45
Australia	35
South Korea	29
Spain	16
Brazil	15
Japan	14
China	10
India	02

Source: Master Card Advisors

4. Report Card

- ✓ 86% of currency was sucked out of circulation by note ban
- ✓ 104 deaths (linked to demonetisation)
- ✓ 60 order related to demonetisation had been issued by 19 December, 2016
- ✓ Rs. 14.2 trillion currency notes of demonetisation of Rs. 500 and Rs 1000 as on 31 March, 2016
- ✓ Rs. 12.4 trillion is the amount banks had received since demonetisation as deposit till 10 December, 2016 (about 87% returned)

Source: Daily HT 26 December, 2016 p-13

Impact of Demonetisation (8.11.2016):

(i) Growth and Employment: Milton Friedman, the great Chicago economist, argued that the great depression happened because of shortage of money. Milton had a strong faith in free markets but he did not believe that a market economy could function, when there is an acute shortage of money. One man's expenditure is other's income and so on the process goes on. There is a cascading effect on transactions, with the result that GDP shrinks by much more than the original short fall in liquidity. Economists often head where angels fear

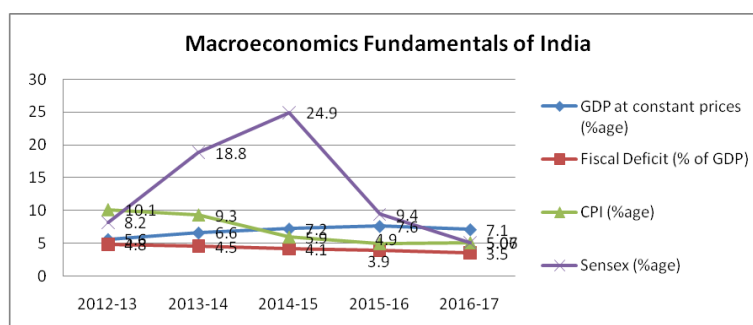
to tread to quantify the unquantifiable and put out a precise number that a 1-2 percentage point decline is likely in the growth rate due to demonetisation. If the economy has been expanding by 7.1%, the prospect is for it to slow down to 6.1% or worse to 5.1%. 2 percent cashless economy cannot be built up as a 50 percent cashless economy in short period. As a result:

Cash Crunch in an economy $\Rightarrow$ Aggregate Demand $\downarrow \Rightarrow$ Investment $\downarrow \Rightarrow$ Employment Volume $\downarrow \Rightarrow$ Income and Output $\downarrow \Rightarrow$ Growth Rate $\downarrow$

Table 4: Macroeconomics Fundamentals of India

Year	GDP at Constant Prices (%age)	Fiscal Deficit (% of GDP)	CPI (% age)	Sensex (% age)
2012-13	5.6	4.8	10.1	8.2
2013-14	6.6	4.5	9.3	18.8
2014-15	7.2	4.1	5.9	24.9
2015-16	7.6	3.9	4.9	9.4
2016-17	7.1	3.5	5.06	5.07
(Estimates)	(RBF)	(Budget Estimates)	(April-Nov. 2016)	(till 30.12.2016)

Source: Daily HT, 31.12.2016, p-19 (The year in Review)



Analyst polled by Reuters had expected a 6.4% growth rate in the quarter to Dec. 2016. The pace of growth did, however slow from 7.4% logged in the second quarter of the fiscal year. The Centre Statistics Office (CSO) retained its projection that the economy will grow 7.1% in 2016-17 slowing down from 7.6% in the previous financial year. On 1.2.2017, CSO revised the 2015-16 GDP growth number to 7.9 percent from 7.6 percent estimated earlier except construction (2.7%) and financial & real estate (3.1%) sectors, all other sectors grew at a faster pace in the third quarter compared with the preceding quarter. The first and second quarter GDP growth estimates were also revised upward by 10 basis points to 7.2% and 7.4% respectively. Private final consumption picked up in the third quarter to grow 10.1% against 5.1% in the second quarter. Manufacturing was expected

to be hit due to falling consumption demand; it grew 8.3% in Q3 against 6.9% in Q2.

India's factory output as measured by the index of industrial production rose 2.7% in Jan. 2017, apparently shrugging off the impact of demonetisation. Data released by CSO showed that in Jan. 2017, mining, manufacturing, and electricity output increased at the rate of 5.3%, 2.3%, and 3.9% respectively. Capital good production, a key indicator of investment demand in the economy also rebounded, growing by 10.7% in the month of Jan. 2017. Consumer demand is yet to be picked up, consumer goods production contracted by 1% mainly because of a sharp fall in consumer non-durable goods production. However, the impact of demonetisation is not fully captured, as IIP numbers do not factor in unorganised sector data India's economy 7% in the third quarter⁵.

World Bank CEO, Kristalina Georgieva, “To ban high value bank notes as part of efforts to stamp out corruption will have a profound and positive impact on India’s economy. Demonetisation may have caused some hardship to people living in the cash economy but in long run the move will help to foster clean and digitalised economy.”⁶

Today, India stands before a unique moment in history. It could choose to squander its immense potential with its antiquated socio-political system,

heritage, democratic values, and a young demography to transform the lives of its 1.3 billion citizens. According to a study made by Pricewaterhouse coopers, “It will have to create jobs on a scale that can absorb 10-12 million people, who join the workforce every year, including members of the emerging middle class- a billion strong by 2034. Only 1,35,000 jobs were created in 2015, the lowest in seven years and 67% lower than the number created in the last year of the UPA government.

Table 5: Volume of New Jobs

Year	New Jobs Creation
2009	12,80,000
2010	8,70,000
2011	9,29,000
2012	3,21,000
2013	4,19,000
2014	4,21,000
2015	1,35,000

In one quarter of 2016-17, for which official data is available 77,000 jobs were created, of which 50,000 were government jobs. In 2016, the employment survey methodology was changed, expanding it to all the states, unemployment rate as of Feb. 3, 2017 was 6% (+1% higher in respect to base Sept. Dec 2015). However, demonetisation has adversely affected the unorganised sector and casual daily wage labour. Negative perception about employment is the highest since Modi government took over. Data on rural wages, released by RBF, shows that non-agricultural wages have done much worse in comparison to agriculture wages in the month of Nov. and Dec. 2016.⁷

(ii) Medical Tourists: Demonetisation of high value currency notes has added to the problems of several foreign nationals, who are in India for medical treatment. They were facing in difficulties in getting exchange for foreign currency and paying hospital, food and accommodation bills. India has become a hub of medical tourists because of the factors namely: 1. Cost is a major driver for nearly 80% of medical tourists across the globe 2. Availability of accredited medical facilities 3. Among medical tourism corridors of Singapore, Thailand, Malaysia, Taiwan, etc. India has the second largest number of accredited facilities and 4. Chennai, Mumbai, Andhra Pradesh and Delhi NCR are the most favoured medical tourism destinations. The medical tourism industry in India is valued at USD 2 billion in 2015, with India

issuing 1.3 lakh medical visas that year. Africa account for more than half the overseas patients (51.1%) followed by Asia and the Pacific (22.5%) and the America (15.7%), shows- Ministry of tourism data. This problem was an outcome of the immediate effect of demonetisation.

(iii) Farmer’s Plight and Farmers Loan Waiver: In chasing higher and higher GDP growth rates, India tends to gloss over two facts (farm growth cut poverty twice as fast as industrial growth and a one percent rise in agricultural output raises industrial production by 0.5% and national income by 0.7%. in other words, the country’s fortunes are structurally tied to its farmers. Two-third of Indians relies on a farm-based income. Policy makers celebrated the green revolution for too long without realising it had run its course. Delinking farms and rains still remains a challenge. The rate of investment in agriculture in the 80s and 90s was between 8-12 % with such a low spending in agriculture, farm growth hobbled at 2.4 % or so. Even today, irrigated lands make up only 40% of the country’s arable land, making 60% of the net sown area vulnerable to monsoon failure. Therefore, area cannot be expanded but only way to go to raise productivity. Input subsidies cannot help as per our expectations.

Investment → ↓ Rate of Growth ↓ farm incomes ↓
(farmers are disillusioned to abandon farming → where do they go

Share of agriculture in GDP (percent points) has gone down from 38.6% in 1972-73 to about 14% in 2012-13 and then marginally up to 17% in 2015-16. There is a leakage between GDP growth rate and change in the sales of passenger vehicles, two

wheelers, TV sets, and refrigerators (consumer durables). Farm investment has now reached 20% or so of the GDP but most of it comes from the private sector. Experts recommend that public investment must also go up.

Table 6: Trends in Agricultural Growth Rate

Year	Growth Rate (%age points)
2012-13	1.5
2013-14	4.2
2014-15	-0.2
2015-16	1.2
2016-17	4.1 (Year after demonetisation but of good monsoon after two consecutive droughts)

A UN report said one farmer commit suicide every 32 minutes between 1997 to 2005. So far, the centre has waived farm loans twice in 1990 and 2008. Under the agriculture debt waiver and debt relief scheme of 2008, the government waived entire loan to marginal and small farmers (up to 2 hectares land holding) and offered one time relief of 25% to other farmers. A 2015 International

Council for Research and International Economics Relations (ICRIER) paper says that massive write off loans in 2008 took its toll on the banks; increasing the non-performing assets of commercial banks, three fold between 2009-10 and 2012-13. Despite government efforts to increase institutional lending in rural areas, many still borrow from moneylenders.

Table 7: Proportion of Sources of Lending in Rural Areas

Year	Institutional Source (% age)	Non-Institutional Source (% age)
1951	7.2	92.8
1961	14.8	85.2
1971	29.2	70.8
1981	61.2	38.8
1991	64.0	36.0
2002	57.1	42.9
2013	56.0	44.0

Source: NSSO, Quoted from Daily HT (28.12.2016), p-19

According to ICRIER, generalised loan waivers should be avoided as these impair the agricultural credit channels.

(iv) Connection between high cash economy and corruption: Cash in circulation in an economy has little correlation with corruption, a comparative analysis of World Bank and transparency international data suggests, deepening suspicious that those with black money prefer to keep their ill-gotten wealth in other forms of assets. While figures show that India holds 11.8% of its

economy is ranked a poor 76th in the global corruption ranking. Germany, at the 9th in the graft ranking, has a 8.7% cash economy. Hindustan times analysed the cash in circulation and GDP of 26 countries- 12 top economies barring the US and China, 12 very corrupt countries with stable government and three mid-sized economies with varying corruption ranks. Table given below clearly establishes that there is no correlation between cash in circulation as a portion of its GDP with corruption.

Table 8: Cash in Circulation as a Portion of its GDP with Corruption

Country	GDP (in trillion dollar)	Currency in circulation (in billion dollar)	Currency in ratio to the GDP (%age)	Corruption Ranking
Japan	4.12	852	20.7	18
Germany	3.36	293	8.7	10
France	2.42	227	9.4	23
India	2.07	245	11.8	76
Italy	1.18	199	10.9	61
Brazil	1.77	68	3.8	76
Canada	1.55	59	3.8	9
Korea	1.38	77	5.6	37
Australia	1.34	54	4.0	13
Russia	1.33	139	10.5	119

The analysis of data showed up: Russia, the world's 13 largest economy and Spain, the 14th largest, shared the same proportion of cash economy. Yet, Russia is ranked 119 on the corruption index while Spain is also cleaner at 36.

(v) Tax Evasion, undisclosed income to see a decline: Demonetisation appears to have provided the impetus for the expansion of formal economy and has laid the groundwork for a corruption free India by giving authorities an insight into the income of taxpayers and the source of their earnings. Direct tax collection soared from 6% in 2015-16 to 15% this year and is expected to rise further primarily due to the government's crackdown on black money. Demonetisation is also an exercise on the part of the government to eliminate corruption, black money, counterfeit currency, and terror funding. While securing bank notes against counterfeiting was cited as the objective of the withdrawal of 17,165 million pieces of Rs 1000 notes- valued at Rs. 15.44 lakh crore, there was no official estimate of fake note in circulation. However, a study

conducted by Indian Statistical Institute, Kolkata, on statistical estimation of counterfeit notes indicated that FICN in circulation was approximately Rs. 400 crore and around Rs. 70 crore was been pumped into the system annually⁸.

The cash to GDP ratio in India is 12.2%, while in most developed and developing economies it remained between 2 to 5 %. Demonetisation has also given huge push to digital money and thrust towards a cashless economy and the thrust is now on transparency, so many people will now come under the income tax net.

Black money worth Rs. 14697.24 crore has been unearthed in the April to Feb. period of 2016-17 against Rs. 11,226 crore during the entire financial year of 2015-16. During the two months of demonetisation from Nov. 2016 to Jan. 2017, the government unearthed unaccounted cash worth Rs. 513 crore, of this Rs. 110 was in new currency. The direct tax collection has jumped from 6% in 2015-16 to 15% this year entirely on account of action against black money.

Table 9: Heightened Tax Vigil

Year	Total Undisclosed Income Admitted (Rs. Crore)	No. of Entities Raided
2012-13	10291.61	422
2013-14	10768.55	568
2014-15	10228.05	545
2015-16	11226.02	447
2016-17	14697.24	1037

Source: Daily HT, 20.03.2017, p-9

(vi) Tax collection and government's expectations:

Direct tax collections are likely to fall short of budget target in 2016-17 with the government managing to garner only 73% of the estimated collections in Feb. 2017. Data released by the finance ministry show that direct tax collections in April-Feb. 2017 amounted to Rs. 6.17 lakh crore, a 10.7% rise from a year ago. After adjusting refunds corporate tax collections grew only 2.6% while personal income tax collections were up 19.5%. Indirect tax collections until Feb. amounted to Rs. 7.72 lakh crore, a 22% rise from the year ago period.⁹

Management of the Impact of Demonetisation

The Economic survey 2016-17, acknowledged that demonetisation had influenced the economy in short run and caused inconvenience, especially to those in the informal and cash intensive sectors of the economy, which have lost income and employment. The long term benefits of reduced corruption, greater digitalisation of the economy, increased flow of financial savings and greater formalisation of the economy, this could eventually lead to higher GDP growth, better tax compliance and greater tax revenue.

But the gross non performing asset level – loans that have turned unproductive – increased to Rs. 6.3 lakh crore as on 30.9.2016 from Rs. 5.5 lakh crore as on 30.06.2016 that is an increase of Rs. 79977 crore only in quarter. This issue is a very serious issue and has to be addressed at the earliest. That is why the government is going to inject an additional Rs. 8000 crore into the cash starved public sector banks by the end of 2016-17, this is in addition to the prescribed recapitalisation amount of Rs. 25000 crore for the current financial year. New currency notes of Rs. 12 lakh have been pumped into the system since 9.11.2016 (the date of demonetisation)¹⁰. There may not be a proportional relationship between supply of money and credit money with the prices and other related variables. But these are to be managed in coordination with the monetary and fiscal authorities of the economy in an effective manner.

Despite the criticisms, quantity theory of money has its own merits. Quantity theory of money has not lost its validity in modern times, however, its assumptions may not hold good.

$$P' = \frac{MV + M'V'}{T}$$

$$\text{or } PT = MV + M'V'$$

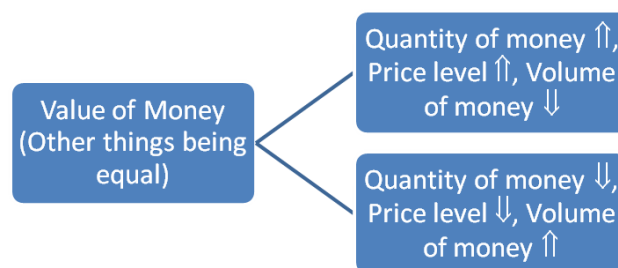
M – Quantity of Money, supplied by the government / central bank

V – Velocity (no. of transactions made by a unit of money M)

M' – Credit Money and V' is its velocity

T – Total volume of Trade and

P – General price level



Value of Money = Purchasing power = The no. of goods and services which can be bought by a unit of money and naturally there is an inverse relationship between general price level and value of money.

Conclusion

Many social disadvantages are associated with the use of money, because it has been responsible for large-scale corruption in modern societies. The possessor of wealth and money has certain disadvantages, which others do not have. Excessive cash boosts parallel economy and that is why it must be curbed. Demonetisation move was primarily aimed at weeding out the ills of society. Finance Minister Arun Jaitley said in the Rajya Sabha "It is no credit to any economy that you deal in cash.....cash has a lot of vices." Counterfeiting and to curb black money were cited as the two main objectives of withdrawal of 17,165 million pieces of Rs 500 of 6,858 million pieces of Rs. 1000 notes- valued Rs 15.44 lakh crore. Demonetisation was planned, the decision was not taken in a day. According to RBI governor, "the government may be best to reply whether demonetisation would curtail black money".¹¹ Von Mises, the German Economist remarked, "Money is regarded as the cause of theft and murder, of deception and betrayal. Money is blamed when the prostitute sells her body and when a bribed judge perverts the law".¹² A study of economic history of the last century furnishes ample evidence to show that money does go wild and at times causes untold suffering. Thus, "money, which is a

source of so many blessings to mankind, becomes, also, unless we can control it, a source of peril and confusion".¹³ Some people manage to drink from many fountains while others go thirsty because they do not know where to look. The management aspect depends upon good governance, because the impact could be a mixed bag of pains and gains. However, let the pains be temporary and gains to be permanent.

Endnotes

1. DK Rangnekar. Minute of Dissent in Direct Taxes Enquiry Committee. Final Report, Dec. 1971. p. 249
2. Direct taxes enquiry committee, Final Report, December 1971, p. 9
3. Rock Rose Ackerman (1999) Corruption and Government: Causes, consequences and reforms, p-9
4. Dutt & sundharam. (2016). Indian Economy. p-443. S. Chand & co., New Delhi
5. Daily HT, 11 March, 2017, p-21
6. An interview given in Hindustan Times on 01.03.2017, published in Daily HT on 03.03.2017
7. Daily HT, 16, Feb. 2017, p-12
8. Daily HT, 25th April, 2017, p-6
9. Daily HT, 11 March, 2017, p-21
10. Daily Hindustan Times, 11.3.2017, p-11
11. Daily HT, 26th April 2017, p-6
12. Von Mises. The Theory of Money and Credit, p-93
13. Robertson, D.H. Money. p 15-16 (1932ed.)

References

- Jadhav, N., Ray, P., Bose, D., Gupta, N. (2003). The Reserve Bank of India's Balance Sheet: Analytics and Dynamics Of Evolution, *Reserve Bank of India Occasional Papers*, 24(3).

- Sundaram, K. & Pandit, V. (1976). On Black Economy. *Indian economic review*, 9, (2).
- Chopra, O.P. (1982). Unaccounted Income: Some estimates. *Economic and Political weekly*, 17, 17-18.
- Gupta, P. & Gupta, S. (1982). Estimates of the unreported Economy in India. *Economic and Political weekly*, 17(3)
- Kaldor, N. (1956). Indian tax reform. The department of economic affairs. Ministry of finance: GOI
- Gurumurthy, S. (1987). Bribery and capital flight. *Financial express*, 23-26
- Ahuja, R. (2007). "Social Problems in India" (2nd Ed). Jaipur: Rawat Publications.
- Report on "Measures to Tackle Black Money In India And Abroad", Government Of India, Ministry Of Finance, 2012 (Report of committee headed by Chairman CBDT, Parts I & II)
- Nafees. A., Khan, P., Chaudhary, T. (2003). Black Money: Its Impact on the Indian Economy. Tax Reforms in India (Ed.). Srinawas Publications. Jaipur, 150- 155,
- Sukanta Sarkar (2010). The parallel economy in India: Causes, impacts & government initiatives. *Economic Journal of Development Issues*, 11-12 (1-2). 124-134.
- Singh, V.K. (2009). Controlling money laundering in India – problems & perspectives. 11th Annual Conference on Money and Finance in the Indian Economy. Indira Gandhi Institute of Development Research
- Agarwal, L. (2012). White Paper on Black Money. *Journal of Securities Academy & faculty for e-education*, 72.
- Tax Research Team. Demonetisation: Impact on the Economy No. 182 14-Nov-2016. National Institute of Public Finance and Policy. New Delhi.
- Shanmugapriya. S & Veerakumar. K, (2014). Determinants of Investment decision on Online Commodities. *Acme International Journal of Multidisciplinary*. 2(9). 39-45.

GUIDELINES FOR AUTHORS

'Optimization': Journal of Research in Management is double blind review journal. It welcomes original papers from both academicians and practitioners on management, business, and organizational issues. Papers, based on theoretical or empirical research should exemplify the practical applicability and/or policy implications of work described.

The manuscript should be accompanied by the following: (1) An abstract of 150-200 words along with five key words; (2) A brief profile of the author/s describing author's name, current designation and affiliation, contact address, phone/fax numbers and e-mail address etc. The authors should send a declaration stating that the paper has neither been published nor will it be submitted elsewhere till the editorial decision from 'Optimization': Journal of Research in Management has been communicated. Recommended length of the manuscript should not exceed 8,000 words. All tables, charts, and graphs should be placed with the content and should be in black and not in color. Wherever necessary, the source should be indicated at the bottom. The number and complexity of exhibits should be as low as possible. Authors are expected to adhere to standards of correct academic writing. References indicated at the bottom should be complete in all respects, with authors' names arranged alphabetically.

We request authors to follow the APA Style developed by the American Psychological Association.

Book: Single author

In-Text Citation: (Pegrum, 2009)

Reference List: Pegrum, M. (2009). From blogs to bombs: The future of electronic technologies in education. Crawley, W.A: UWA Publishing.

Book: Two authors

In-Text Citation: (Page & Stritzke, 2015) But when outside parenthesis: Page and Stritzke (2015) suggested that ...

Reference List: Page, A. C., & Stritzke, W. G. K. (2015). Clinical psychology for trainees: Foundations of science-informed practice (2nd ed.). Cambridge: Cambridge University Press.

Book: Chapter [ie. article] in edited book

In-Text Citation: (Groundwater-Smith, 2007)

Reference List: Groundwater-Smith, S. (2007). As rain is to fields, so good teachers are to students. In S. Knipe (Ed.), Middle years schooling: Reframing adolescence (pp. 151-170). Frenchs Forest, N.S.W: Pearson Education Australia.

Journal article in print: 8 or more authors

In-Text Citation: (Sohrabi et al., 2011)

Reference List: Sohrabi, H. R., Weinborn, M., Badcock, J., Bates, K. A., Clarnette, R., Trivedi, D. Martins, R. N. (2011). New lexicon and criteria for the diagnosis of Alzheimer's disease. *Lancet Neurology*, 10(4), 299-300.

Journal article online

In-Text Citation: (Gagné et al., 2015)

Reference List: Gagné, M., Forest, J., Vansteenkiste, M., Crevier-Braud, L., van den Broeck, A., Aspel, A. K., ... Westbye, C. (2015). The Multidimensional Work Motivation Scale: Validation evidence in seven languages and nine countries. *European Journal of Work and Organizational Psychology*, 24(2), 178-196. <http://dx.doi.org/10.1080/1359432x.2013.877892>

All Correspondence should be addressed to:

Chief Editor

GL Bajaj Institute of Management and Research

Plot No. 2, Knowledge Park – III, Greater Noida

G.B. Nagar, (U.P.) – 0201306, India.

Helpline Number: 8010-081-081, E-mail: director.general@glbimr.org, glbimrjournal@glbimr.org

Website: <http://glbimr.org/journal-glbimr.php>

'Optimization': Journal of Research in Management reserves the right to make editorial amendments to the final draft of the manuscript to suit the journal's requirements. Communication regarding editorial changes and proofs for correction will be sent to the first author unless otherwise indicated.



GL BAJAJ

Institute of Management and Research

Plot No.2, Knowledge Park-III, Greater Noida-201306

Helpline Number : 8010-081-081

e-mail: director.general@glbimr.org • www.glbimr.org

*Printed and published on behalf of GL Bajaj Institute of Management and Research
Plot No. 2, Knowledge Park – III, Greater Noida, G.B. Nagar, (U.P.) – 0201306 at Bharti Publications, New Delhi*