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## **Operational Adequacy Of Working Capital Management Of Selected Indian Automobile Industry - A Bivariate Discriminant Analysis**

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### **Abstract**

The study in general aims at making a study of the management performance relating to working capital in the selected units of the automobile industry in India. It covers seventeen major units in the automobile industry (five in commercial vehicles sector, three in passenger cars and multiutility vehicles sector and nine in two and three wheelers sector). For the purpose of the study, necessary data on working capital and other related variables were collected for the period 1992-93 to 2006-07. The financial statements used were mainly the Profit and Loss accounts and Balance Sheets published in the annual reports of the respective units. The study used a variety of financial ratios to accomplish the objectives. It employed discriminant analysis to examine adequacy of working capital.

The operational adequacy of the working capital of the selected units has also been assessed by employing the discriminant analysis based on the size of working capital in terms of monthly operational requirements and sales requirements as independent variables. The construction of discriminant function suggests that the size of net working capital in terms of monthly operational requirements appeared to be stronger than sales requirements in all the years. The discriminant Z values were estimated and the good risk and poor risk enterprises may also be identified by computing the cut-off values.

The comparison of good and poor risk units as per the current ratio and as per the discriminant score shows that the misclassification of units is noticed in all the years. It can be concluded that in the years 1992-93 to 2006-07 Ashok Leyland Ltd in commercial vehicles sector, Mahindra and Mahindra Ltd in passenger cars and multiutility vehicles sector and Bajaj Auto Ltd in two and three wheelers sector units maintained adequate size of the working capital throughout the period under study.

### **Introduction**

Working capital is the portion of an enterprise's total capital which is employed in short-term operations, i.e., current assets. A typical list of these assets in order of liquidity includes cash in hand and at bank, short-term investment, payments in advance, accounts receivables, raw materials inventory, inventory of goods in process and finished goods inventory. The management of all these current assets assumes greater importance because the sum total of investment in current assets forms over one-half of an enterprise's total assets. Besides, liquidity and profitability, the two desired goals of financial management are directly affected by working capital management performance. As the size of working capital increase, both the enterprise's risk and return would decrease and vice-versa. Since, the current assets (working capital) affect the risk return trade off to be achieved by the enterprise, the study of structure, sources and utilization appears to be one of the important areas of investigation on working capital management.

The present study attempts to apply linear discriminant analysis with only two sets of independent variables. The sample units were classified in two categories as per their liquidity ratios. Group A consisted of those units where current ratios were found to be atleast 1.5:1 and rest of the units have been classified in Group B. In this study, adequacy of the size of net working capital has been treated as dependent variable and sizes of net working capital in terms of monthly operational requirements (X1) and sales requirements (X2) have been treated as independent variables. The object is to determine weights for X1 and X2, that is the values of 'a' and 'b' in

$$Z = aX_1 + bX_2$$

where, Z is the discriminant index.

**Table 1**

Good and poor risk units in terms of current ratio

(Group A consists of those units whose current ratio is atleast 1.5:1 and remaining units in Group B)

Year	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07
Group A	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	MUL
	HHML	MML	MML	BAL	HML	EML	EML	MML	BAL	BAL	MUL	MUL	MUL	MUL	BAL
	KEL	BAL	BAL		MML	MML	MML	BAL	MSL	MSL	BAL	MSL	BAL	BAL	HHML
		KML	KML		BAL	BAL	KEL	KEL	KEL	KEL	MSL	HHML	MSL	MSL	SIL
					KEL	TMCL	KEL	SIL	SIL	SIL	SIL	HHML	HHML		
							KEL	SIL							
	n1 = 3 n1 = 4 n1 = 4 n1 = 2 n1 = 5 n1 = 7 n1 = 6 n1 = 5 n1 = 5 n1 = 5 n1 = 5 n1 = 6 n1 = 6 n1 = 4														
Group B	TML	TML	TML	TML	TML	TML	TML	TML	TML	TML	TML	TML	TML	TML	ALL
	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	BTL	TML
	EML	EML	EML	EML	EML	SML	SML	EML	BTL						
	SML	SML	SML	SML	SML	HTML	HTML	SML	EML						
	HML	HML	HML	HML	MUL	MUL	MUL	HML	SML						
	MML	MUL	MUL	MML	LMLL	LMLL	LMLL	MUL	MML	MML	MML	MML	MML	MML	HML
	MUL	LMLL	LMLL	MUL	MSL	MSL	MSL	LMLL	MUL	MUL	LMLL	BAL	LMLL	LMLL	MML
	BAL	MSL	MSL	LMLL	TMCL	KML	TMCL	MSL	LMLL	LMLL	TMCL	TMCL	TMCL	TMCL	LMLL
	LMLL	TMCL	TMCL	MSL	KML	HHML	KML	TMCL	TMCL	TMCL	KML	TMCL	KML	KML	MSL
	MSL	HHML	HHML	TMCL	HHML	MAL	HHML	KML	KML	KML	HHML	KML	KEL	KEL	TMCL
	TMCL	KEL	KEL	KML	MAL		MAL	HHML	HHML	HHML	KEL	KEL	MAL	MAL	KML
	KML	MAL	MAL	HHML	SIL			MAL	KEL						
	MAL	SIL	SIL	KEL		MAL									MAL
	SIL					SIL									
	n2 = 14 n2 = 13 n2 = 13 n2 = 15 n2 = 12 n2 = 10 n2 = 11 n2 = 12 n2 = 11 n2 = 11 n2 = 13														

ALL - Ashok Leyland Ltd; TML - Tata Motors Ltd; BTL - Bajaj Tempo Ltd; EML - Eicher Motors Ltd; SML - Swaraj Mazda Ltd; HML - Hindustan Motors Ltd; MML - Mahindra and Mahindra Ltd; MUL - Maruti Udyog Ltd; BAL - Bajaj Auto Ltd; LMLL - LML Ltd; MSL - Maharastra Scooters Ltd; TMCL - TVS Motor Company Ltd; KML - Kinetic Motors Ltd; HHML - Hero Honda Motors Ltd; KEL - Kinetic Engineering Ltd; MAL - Majestic Auto Ltd; SIL - Scooters India Ltd

**Source: Computed**

The selected units falling in the good and poor risk group are presented in Table 1. After classifying the selected units in to the good and poor risk classes, the discriminant function of the selected years are estimated and presented in Table 2 where the co-efficient for 'a' and 'b' indicate the size of net working capital in terms of monthly operational requirements and sales requirements. The table reveals that the size of net working capital in terms of monthly operational requirements appeared to be stronger than sales requirements in all the years.

**Table 2**  
**Discriminant functions for the period 1992-93 to 2006-07**

Year	Function	Remark
1992-93	$Z = 0.319a - 0.068b$	$a > b$
1993-94	$Z = 1.279a - 0.393b$	$a > b$
1994-95	$Z = 1.492a - 0.459b$	$a > b$
1995-96	$Z = 0.388a - 0.052b$	$a > b$
1996-97	$Z = 2.485a - 1.036b$	$a > b$
1997-98	$Z = 0.692a - 0.484b$	$a > b$
1998-99	$Z = 1.633a - 0.891b$	$a > b$
1999-00	$Z = 2.675a - 1.115b$	$a > b$
2000-01	$Z = 2.295a - 0.956b$	$a > b$
2001-02	$Z = 2.811a - 1.171b$	$a > b$
2002-03	$Z = 1.505a - 0.627b$	$a > b$
2003-04	$Z = 0.935a - 0.389b$	$a > b$
2004-05	$Z = 1.515a - 0.631b$	$a > b$
2005-06	$Z = 1.799a - 0.981b$	$a > b$
2006-07	$Z = 1.605a - 0.494b$	$a > b$

Note: The expression  $a > b$  is to be read "a is stronger than b".

Source: Computed.

The discriminant co-efficient given in Table 2 was multiplied with the mean values of each industry ratio in order to obtain the discriminant score of each units. Table 3 presents the data relating to the discriminant score of all the units. With the help of the discriminant scores, the cut-off value was calculated as follows.

$$\text{Cut off Value} = \frac{n_1 Z_1 + n_2 Z_2}{n_1 + n_2}$$

where  $n_1$  and  $n_2$  are the size of samples and  $z_1$  and  $z_2$  represent the mean of the discriminant score of group A and group B respectively. The cut-off values have also been presented in Table 3. Actual Z scores of the individual units were then compared with the discriminating Z scores. In case where the Z scores were found to be more than the discriminating Z scores, it can be said that the sizes of net working capital were more than the operational and sales requirements.

Table 3

## Discriminant Z values for the selected units (1992-93 to 2006-07)

Units	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07
Ashok Leyland Ltd	1.86	4.05	7.81	1.91	7.48	1.46	4.17	5.49	5.59	6.73	3.01	1.12	2.79	1.75	1.25
Tata Motors Ltd	0.63	2.07	1.30	0.13	2.38	0.36	0.36	-0.91	-2.51	0.50	-0.95	0.10	0.47	0.90	0.46
Bajaj Tempo Ltd	0.45	1.10	1.47	0.24	1.26	0.17	0.81	1.90	1.71	1.90	1.01	0.52	0.62	-0.40	-0.23
Eicher Motors Ltd	0.29	1.07	1.55	0.50	2.12	0.29	1.13	1.64	0.90	0.18	-0.01	0.21	0.26	-0.02	-0.14
Swaraj Mazda Ltd	-0.13	-0.74	-0.62	0.32	2.66	0.48	1.93	2.98	1.63	2.80	0.33	0.33	0.67	0.45	1.67
Hindustan Motors Ltd	0.17	1.23	1.35	0.48	3.05	0.38	0.80	1.83	1.12	0.88	0.68	-0.04	-0.42	-0.87	-0.25
Mahindra and Mahindra Ltd	0.52	2.95	2.84	0.26	4.20	0.60	2.47	4.18	2.55	3.34	1.43	0.20	0.65	1.05	1.40
Maruti Udyog Ltd	0.47	-0.51	-2.66	-0.01	0.75	0.05	1.08	0.16	0.42	0.79	1.70	1.38	2.54	2.70	2.35
Bajaj Auto Ltd	0.45	1.98	4.17	0.96	5.70	1.00	4.24	11.48	5.54	8.28	3.21	1.52	7.25	6.10	7.12
LML Ltd	-0.50	-1.71	0.06	0.15	0.33	0.07	0.74	1.86	0.50	-2.01	-0.37	-0.44	-0.80	-1.91	-6.65
Maharastra Scooters Ltd	0.68	2.41	4.40	0.59	1.58	0.12	0.76	2.62	4.04	9.38	10.71	12.18	7.74	4.89	-8.00
TVS Motor Company Ltd	-0.31	-0.27	0.42	-0.01	0.78	0.24	-0.05	1.00	0.55	0.80	-0.04	-0.03	0.17	-0.34	0.68
Kinetic Motors Ltd	0.21	1.57	1.56	0.22	0.80	0.16	0.81	1.45	1.85	1.13	2.20	0.72	0.13	-1.74	-3.38
Hero Honda Motors Ltd	0.34	0.58	0.29	0.01	0.01	0.12	0.10	-0.37	1.03	-1.51	1.13	0.92	1.54	1.44	1.82
Kinetic Engineering Ltd	0.86	2.59	2.26	0.48	3.41	0.59	1.92	5.54	4.32	6.33	3.00	0.91	1.39	-0.85	2.88
Majestic Auto Ltd	0.03	0.21	0.43	0.55	0.48	0.22	0.42	-1.08	-1.76	-4.02	-1.83	-1.03	1.42	-0.04	-0.30
Scooters India Ltd	-30.03	-141.22	-103.53	-26.67	0.93	0.61	2.62	7.99	7.98	11.50	5.56	2.67	4.76	3.50	6.70
Discriminant Z Score	-1.41	-7.21	-4.52	-1.17	2.23	0.41	1.43	2.81	2.09	2.76	1.81	1.25	1.83	0.98	0.43

Source: Computed

It is evident from Table 3 that during the year 1992-93 to 1995-96, considering discriminant Z score, in case of Scooters India Ltd, the size of working capital was found to be very low considering the operational and sales requirements. In rest of the cases, size of working capital was found to be in excess in relation to operational and sales requirements.

In 1996-97 the cut-off Z score was found to be 2.23. In case of Ashok Leyland Ltd, Tata Motors Ltd, Swaraj Mazda Ltd, Hindustan Motors Ltd, Mahindra and Mahindra Ltd, Bajaj Auto Ltd and Kinetic Engineering Ltd, the size of working capital was found to be in excess to meet their operational and sales requirements. In case of Eicher Motors Ltd, it had satisfactory size of working capital as its Z score was less than 2.23 but was not low to be inadequate. In rest of the cases, size of working capital was found to be inadequate in relation to operational and sales requirements.

In 1997-98, the cut off Z score was 0.41.

Considering this discriminant score, in the case of Hindustan Motors Ltd and Tata Motors Ltd, Z scores were found to be less than 0.41 but were not too low to be inadequate. In the case of Bajaj Tempo Ltd, Eicher Motors Ltd, Maruti Udyog Ltd, LML Ltd, Maharastra Scooters Ltd, TVS Motor Company Ltd, Kinetic Motors Ltd, Hero Honda Motors Ltd and Majestic Auto Ltd, the size of working capital was found to be very low. In rest of the cases it was found that working capital was in excess as Z scored by the individual units were more than the cut off Z score.

In 1998-99, the cut off Z score was found to be 1.43. In case of Eicher Motors Ltd and Maruti Udyog Ltd, the working capital positions was found to be quite satisfactory. In case of Tata Motors Ltd, Bajaj Tempo Ltd, Hindustan Motors Ltd, LML Ltd, Maharastra Scooters Ltd, TVS Motor Company Ltd, Kinetic Motors Ltd, Hero Honda Motors Ltd and Majestic Auto Ltd, the size of working capital was found to be too low and in rest of the case the sizes of working capital was in excess to meet their respective operational and sales requirements.

In 1999-2000, the cut off Z score was 2.81. Considering it as discriminating Z score, it was found that in the case of Ashok Leyland Ltd, Swaraj Mazda Ltd, Mahindra and Mahindra Ltd, Baja Auto Ltd, Kinetic Engineering Ltd and Scooters India Ltd, the size of working capital was found to be in excess to meet their respective operational and sales requirements and in the rest of the cases the size of working capital was found to be too low.

In 2000-01, the cut off Z score was 2.09. In case of Ashok Leyland Ltd, Mahindra and Mahindra Ltd, Baja Auto Ltd, Maharastra Scooters Ltd, Kinetic Engineering Ltd and Scooters India Ltd, the size of working capital was found to be in excess to meet their respective operational and sales requirements and in the rest of the cases the size of working capital was found to be too low.

In 2001-02, the cut off Z score was 2.76. In the case of Bajaj Tempo Ltd and Kinetic Motors Ltd, Z score was found to be less than 2.76 but was not too low to be inadequate. In other words size of working capital was found to be quite satisfactory. In the case of Tata Motors Ltd, Eicher Motors Ltd, Hindustan Motors Ltd, Maruti Udyog Ltd, LML Ltd, TVS Motor Company Ltd, Hero Honda Motors Ltd and Majestic Auto Ltd, the size of working capital was found to be very low. In rest of the cases, it was found that working capital was in excess as Z scored by the individual units were more than the cut off Z score.

In 2002-03, the cut off Z score was found to be 1.81. Considering it as discriminating Z score it was found that in the case of Ashok Leyland Ltd, Baja Auto Ltd, Maharastra Scooters Ltd, Kinetic Motors Ltd, Kinetic Engineering Ltd and Scooters India Ltd, the size of working capital was found to be in excess to meet their respective operational and sales requirements and in the rest of the cases, the size of working capital was found to be too low.

In 2003-04, the cut off Z score was 1.25. Considering it as discriminating Z score it was found that in the case of Maruti Udyog Ltd, Bajaj Auto Ltd, Maharastra Scooters Ltd and Scooters India Ltd the size of working capital was found to be in excess to meet their respective operational and sales requirements and in the rest of the cases, the size of working capital was found to be too low.

In 2004- 05, the cut off Z score was found to be 1.83. In case of Ashok Leyland Ltd, Maruti Udyog Ltd, Bajaj Auto Ltd, Maharastra Scooters Ltd, Scooters India Ltd, the size of working capital was found to be in excess to meet their operational and sales requirements. In case of Hero Honda Ltd it had satisfactory size of working capital as its Z scores was less than 1.83 but was not too low to be inadequate. In rest of the cases, size of working capital was found to be inadequate in relation to operational and sales requirements.

In 2005-06, the cut off Z score was 0.98 considering it as discriminating Z score it was found that in the case of Ashok Leyland Ltd, Mahindra and Mahindra Ltd, Maruti Udyog Ltd and Bajaj Auto India Ltd, the size of working capital was found to be in excess to meet their respective operational and sales requirements and in the rest of the cases the size of working capital was found to be low.

In 2006 – 07, the cut off Z score was 0.43. In the case of Bajaj Tempo Ltd and Eicher Motors Ltd, Z scores was found to be less than 0.43 but was not too low to be inadequate. In other words size of working capital was found to be quite satisfactory. In case of Hindustan Motors Ltd, LML Ltd, Maharastra scooters Ltd, Kinetic Motors Ltd and Majestic Auto Ltd, the size of working capital was found to be very low. In rest of the cases it was found that working capital was in excess as Z scored by the individual units were more than the cut off Z score.

## Conclusion

In the years 1992-93 to 2006 -07 Ashok Leyland Ltd in commercial vehicles sector, Mahindra and Mahindra Ltd in passenger cars and multiutility vehicles sector and Bajaj Auto Ltd in two and three wheelers sector units maintained adequate size of working capital in relation to sales and output requirements throughout the period under study.

**Table 4**  
**Classification Matrix**

Year	As per Current Ratio		As per Discriminant Score	
	Adequate	Inadequate	Adequate	Inadequate
1992-93	3	14	16	1
1993-94	4	13	16	1
1994-95	4	13	16	1
1995-96	2	15	16	1
1996-97	5	12	7	10
1997-98	7	10	6	11
1998-99	6	11	6	11
1999-00	5	12	6	11
2000-01	5	12	6	11
2001-02	5	12	7	10
2002-03	5	12	6	11
2003-04	5	12	4	13
2004-05	6	11	5	12
2005-06	6	11	7	10
2006-07	4	13	10	7

**Source: Computed**

The number of good and risk units as per the current ratio and as per the discriminant score are presented in Table 4. It is clear from the table that the misclassification of units is noticed all the years. Generally one unit in the good risk group has been misclassified as poor risk under the criteria of discriminant score. Such industries are Ashok Leyland Ltd in 2003-04, Eicher Motors Ltd in the years 1997-98 and 1998-99, Maruti Udyog Ltd in 2002-03, TVS Motor Company Ltd in 1997-98 and Hero Honda Motors Ltd in the years 2003-04 and 2004-05. It is also inferred that the poor risk industries appeared to be good risk under the criteria of discriminant score. Such unit is Ashok Leyland Ltd in the year 2006-07, Tata Motors Ltd in 1992-93, 1993-94, 1994-95, 1995-96, 1996-97 and 2006-07, Bajaj Tempo Ltd in 1992-93, 1993-94, 1994-95 and 1995-96, Eicher Motors Ltd in 1992-93, 1993-94, 1994-95 and 1995-96, Swaraj Mazda Ltd in 1992-93, 1993-94, 1994-95, 1995-96, 1996-97, 1997-98, 1998-99, 1999-2000, 2001-02 and 2006-07, Hindustan Motors Ltd in 1992-93, 1993-94, 1994-95 and 1995-96, Mahindra and Mahindra Ltd in 1992-93, 1995-96, 2000-01, 2001-02, 2005-06 and 2006-07, Bajaj Auto Ltd in 1992-93 and 2003-04, LML Ltd in 1992-93, 1993-94, 1994-95 and 1995-96, Maharastra Scooters Ltd in 1992-93, 1993-94, 1994-95 and 1995-96, TVS Motor Company Ltd in 1992-93, 1993-94, 1994-95, 1995-96 and 2006-07, Kinetic Motors Ltd in 1992-93, 1995-96 and 2002-03, Hero Honda Motors Ltd in 1993-94, 1994-95 and 1995-96 Kinetic Engineering Ltd in 1993-94, 1994-95, 1995-96, 2002-03 and 2006-07. Majestic Auto Ltd in the years 1992-93, 1993-94, 1994-95, 1995-96.

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### **Abstract**

The phenomenon of blogs is growing rapidly and is expected to increase even in a more rapid pace, blogs provides a new way of communicating with customers, as customers want to be talked with, not to and companies have newly started to pay attention to this and as a result, the concept of blog marketing has been born. There is a little research that has been done on blog marketing from a company perspective and no or little research has yet considered how consumers use blogs. In order to use blogs as a communication tool, it is of huge importance for companies to understand how consumers use blogs in their decision making. Hence the purpose is; "To explore how and why consumers use blogs in their decision making process" in order to answer this purpose interviews on young adults is conducted, from the collected data a qualitative analysis is made in which the empirical findings were analyzed. From the analysis it is found that consumers use blogs throughout their decision making, within the consumers' decision making, collaborative blogs was mostly used as the consumers could get more input from a larger audience and because this type of blog tended to cover a specific topic of interest for the consumers. Consumers were found mainly writing in the blogs when they had knowledge to contribute with or when they needed information that

they could not otherwise find in the blogs. It is also noticed that consumers turned to groups they belonged to, so called normative group, or they turned to groups that they did not belong to, so called comparative groups these groups influenced the consumer by providing them with knowledge and by giving them positive and negative confirmation on their choice of purchase. However normative groups also persuaded the consumer to buy products in order to belong to the group. Besides this, a pattern of characteristics of the individuals that the consumer blogged with were noticed, consumers wanted user experiences and thus the vast majority of these individuals they turned to, seemed to be consumers themselves, with relevant product experiences. The consumers also seem to blog more with certain individuals, whose opinions were valued more; these individuals often shared the latest information on products lastly it is found that consumers seemed to be selective when reading blog posts. The blog posts needed to contain detailed- and up-to-date information. Moreover, consumers wanted blog post to be written by other consumers because they saw them as more credible then companies. The consumers also chose to read blog posts that show similarities between the consumer and the blogger in terms of either usage pattern of product or preference for product choices.

**Key words:** Blog, Collaborative blog, Diary blog, Blogging, Blog post, Bloggers, Blogosphere

## Introduction

Ever since the internet was introduced for the general public during the 1990s, people have used it as a source of information, recent statistics shows that the majority of the educated population in India use internet in order to get information regarding products and services, but the most statistics available does not tell how the consumers use the internet and what kind of information they search for. There are many different sources of information online, for example company web pages, communities, blogs etc. The concept of blogs and blogging is a relatively new phenomenon in today's society and it has not really been fully explored before. Nevertheless, magazines are today filled with articles on the importance for companies to start blogging and join the communication of the future, if they do not want to loose ground to their competitors. Today limited research has been made within the concept of blog marketing and research that has been conducted had the focus on how companies can use blogs in order to interact with consumers, something that has not been considered, and has been taken for granted, is the issue of how consumers use blogs in their decision making. Moreover, how consumers consider the information that is being transmitted on the blog has not yet been explored; the truth could be that consumers use blogs in a way that companies have not thought about and the existing use of blog marketing could thus miss its objectives if companies do not know how their audience perceives it.

## Problem Discussion

There are several interesting angles to take on the problem discussed above, for example;

how does the communication process in blogosphere looks? What does the feedback process in communication process look like? Which different message contents, structures and format are there in blogosphere? In the present study it is however chosen to focus on the consumer decision making process and to explore how consumers use blogs in this process since this area is not very extensively researched.

The focus on the consumer decision making process in the context of blog is of importance for several reasons as it is today unclear how and in what stages consumers use blogs in their decision making process. Traditional marketing tools such as advertising, sales promotion etc have different impact in the different stages of the consumer decision making process, but it is unclear what impact blogging has in those stages, by mapping out this information, companies can learn how to use their marketing in a new and innovative way to appeal consumers. To be successful in blog marketing, marketing needs to be shaped in accordance to consumers' blog usage, this is however difficult to do as no research have ever really been conducted on consumers blogging habits. If companies learn how blogs are used, they can benefit in several ways, for example, they can engage in the viral marketing on the blogs to create knowledge of their products, they can listen on why consumers prefer competitor's products. As blog marketing is a new phenomenon, existing theory on consumer decision making and market communication might not be completely integrated with blogging thus the purpose is to see how to explore how and why consumers use blogs in their decision making process.

## Forum, Blogs And Online Community

In order to clarify the study it is needed to distinguish the differences between blogs, discussion forums and virtual communities. Discussion forums are divided into specific sub forum dealing with a distinctive topic where the contributions are posted in a chronological order, the main distinguishing characteristic between blogs and discussion forums is that the reader has the ability to follow the blog through specific software and received message when the blog is updated. The administrator that creates the conversation in the discussion forum can be a different user every time new conversations appear on the forum, the administrator has access to edit, close, delete comments and modify the thread on the forum that he/she created. Virtual communities are a sociological group where individuals are official members that interact in a socialized approach, the communication in an online community is usually a supplemental form of face-to-face interaction, where the members write separately to each other. The distinguishing characteristic between a blog and an online community is that the latter requires registration for the user in order to take part of the content in the online community where a blog allow the reader to read.

## Research Questions

As the purpose of this study is to explore how consumers use blogs in their decision making, the model adopted for this study, consists of five stages; need recognition, information search, evaluation of alternatives, purchase and the post-purchase process. Consumers do not necessarily go through all this stages or this exact order but however chosen to arrange the study in this

order as it will be easier in order to learn more about the influence of blogs in the different stages and generally how the blog works in consumer decision making.

### **The first research question states;**

What blogs are used within the consumer decision making process?  
How are these blogs used?  
How do these blogs influence the consumers' decision making?

When the consumers are about to make a purchase, they are normally affected by what other people around them think, to make sense of belonging the following research questions were developed;

Are there certain groups in the blogosphere that influence the consumers in their decision making process?  
How do these groups influence the consumers in their decision making process?

However, before the consumer comes to this decision, they have to be influenced from somewhere so the concept of market communication comes into picture, the third research question reads;

What characterizes the individuals that the consumers are influenced by in their decision making?

What makes consumers turn to these specific individuals?

What do they focus on in their blogging, why do they choose this specific blog post to focus on?

All these questions we had before reading developed into the following research question;

What characterize the information in the blog posts that consumer choose to read?

### Research approach

The purpose of this study is to understand how consumers perceive their own experiences and behavior; so inductive approach is used in this study which suggest and allow a more flexible structure that will permit alternative explanations of the phenomena. Putting emphasis on the inductive approach, the research strategy is built on an exploratory study as the purpose is not intended to study the effects of change and development of the blogging phenomena on the consumers' decision making process; instead it is intended to be a "snapshot" approach of a particular time. To answer the purpose, a large number of complex and open ended questions using a semi-structured interview and in-depth interviews are administered on young, educated, adults.

### Consumer Decision Making Process

Under this section the following research question will be analyzed;

What blogs are used within the consumer decision making process?

How are these blogs used?

How does these blogs influence the consumers' decision making?

### Need

Many of our informants agreed to have developed many needs for new products while blogging the main reason for this is that they found very much up-to-date information about products in the blogs, this on products created a change in the informant's desired state, and thus made the gap between the informant's current position and desired state larger. In cases when a need was not developed the informants were not

motivated enough to close the above mentioned gap, the most notable reason was their limited amount of money and a few of the informants were also target oriented in their blogging; they only searched to fulfill the need they had discovered elsewhere, thus excluding all other products and complements.

**Collaborative blogs:** The collaborative blog was the one used the most often by informants which is characterized by many bloggers who participate, both reading and writing, but also posting comments on other blogger's blogs. This suggests that collaborative blogs should provide more exposure of information, related to the consumers' field of interest, thus making it more influential in need recognition.

**Diary blogs:** Only a few informants used diary blogs when developing a need because the information most often only comes from one author, the informants should be exposed to less information within their field of interest, and this might explain why diary blogs seemed to have a weaker ability to create need for the informants.

Following this discussion, no other types of blogs are used at this stage of the consumer decision making process, thus ruling out blogs such as product blogs, company blogs etc. An important behavior noticed among informants was that when they discovered a need, they only read other's blog posts more than reading comments on their own blog posts, thus when developing a need they were very passive as bloggers.

### Information search

When searching for information, many informants reported that they searched for up-to-date information, the majority of the informants used blogs both in ongoing search and pre-purchase search:

Ongoing search was done when the informant's blogged continuously within their main interest, this was in order to constantly keep up-to-date with what is happening in their favored subject, but also to gather knowledge on a potential future purchase. Another reason for using blogs in ongoing search is the fact that the informants learned very much about their interest from the blogs, a reason for this learning is that a lot of information is gathered in one blog.

**Pre-Purchase Search** When the informants used blogs in their pre-purchase search, they turned to the blog when they knew they was about to buy something and they needed more information. Within the blogging conducted the majority of the external search took place in blogs that addressed a very narrow topic between the ongoing and pre-purchase search there were no differences in which type of blogs used. The blog types noticed within this stage were:

**Collaborative blogs:** When the informants turned to collaborative blogs, they turned to blogs covering narrow topics since it contains input from many writers, the informants felt that they could always find a blog that only covered what they wanted. This could be the fact that there are so many writers in the collaborative, thus our informants could always find someone who had experience from what they wanted and a large number of

users provide the same information. This provides a good explanation of why the collaborative blogs are used more than the diary blogs at this stage.

**Diary blogs:** The diary blogs was only used by a minority of the informants when searching for information, this is a reason to why so few diary blogs are used as they mainly focus on general topic and the everyday life of the writer.

**Company blogs:** Company blogs were only used by few informants since they could not get the information they needed from consumers and all other informants only use collaborative and diary blogs as they can find all the reliable information they need from those.

### Alternative Evaluation

After a while, the informants search for alternatives to their consideration set to decide on which product to purchase with both previously known alternatives and alternatives that came up during the external search. While previously known alternatives were evaluated, the informants tended to only absorb information that supported a decision to purchase as they already knew very much about the subject, and just wanted to strengthen the view of their product at the same time. Besides this, the informants also seemed to be selective in which blog posts they read as the vast information in the blogosphere is sometimes too much to handle at one time thus focusing on certain blog post helped the informants to make their decisions. Informants' within this stage, use two types of blogs:

**Collaborative blogs:** All informants used collaborative blogs at this stage as it gives access to more bloggers and thus more information. This was an important issue explained by informants, as they searched from input from many bloggers.

**Diary blogs:** Only a minority used diary blogs reported at this stage to get information from a specific blogger that they valued more than others, the informants often listened more to the individual blogger while evaluating alternatives, the majority only read blog post. The main reason for this is that the information they needed were already available in the blogs and they did not find the relevant information they wrote in the blogs in order to get answers. An explanation to why some had trouble finding information was that some of the informants searched for very specific information when questions were asked the informants reported that they received well addressed answers that helped them evaluate the alternatives.

### **Purchase decision**

Purchase decision occurred in two ways, either directly or indirectly, the direct influence occurred when the informants wrote in the blog about their potential purchase and the indirect influence occurred when all the previously gathered information made them do the purchase. Therefore this decision to purchase was not affected by the opinion of other bloggers, but more the fact that the informants felt confident enough to purchase. Most informants seemed to use blogs for deciding how and where, to make the purchase.

How the majority of the informants searched information for deciding on how to make the

purchase, this decision often concerned whether to buy in a physical store or in an online store.

Where All informants used blogs in order for deciding on where to make the purchase mostly concerned the trustworthiness of retailer and who offered the best price which was only discussed within the blog when the price information was hard to receive from corporate websites. Many informants explained they are able to receive users' experiences on the reliability of the retailer as collaborative and diary blogs were used at this stage, company blogs were not used because as some informants believe that they do not trust those sources of information.

### **Post purchase decision**

After the purchase was done, all informants did return to the blogs, it showed two main reasons for this, either they searched for confirmation, or they wanted to evaluate their purchase

**Confirmation** The majority of the informants searched for confirmation within the blogs as they want confirmation that they had purchased the right product and only searched for the positive confirmation, reinforcing their choice, thus neglecting all negative comments on their purchase. However, the majority did accept both types of confirmation, and were thus interested to learn what others thought of the product that they had purchased.

**Evaluate their purchase** Many of the informants also used the blog in order to evaluate their purchase as they browsed the blogs in order to find possible problems, but also to search for solutions with their existing problems, this was done by searching for solutions for problems that occurred.

Also at this stage, the collaborative and diary blogs are the most commonly used:

**Collaborative:** This type of blog was used as the informants' were able to either share their experiences on their purchase and/or to share information from others bloggers.

**Diary:** This type of blog was only used by a minority of informants because the diary blogs hardly ever concerned the informants purchase another reason might be that the diary blogs rarely allow other bloggers to comment on their own purchase.

### **GROUP INFLUENCE IN THE BLOGOSPHERE**

Under this section the following research question will be analyzed;

Are there certain groups in the blogosphere that influence the consumers in their decision making process?

How does these groups influence the consumers in their decision making process?

When analyzing the data, it shows that the informants turn to many different groups in the blogosphere which can be categorized as either comparative or normative groups, depending on the influence they have, and whether or not consumer are willing to adapt to the groups.

#### **Comparative Groups**

All the informants turned to groups in the blogosphere which they did not belong, nor desired to belong to but they still had some things in common with the bloggers, namely the fact that they were all consumers.

#### **Normative Groups**

A majority of the informants also had a strong desire to belong, or already belonged, to some

of the groups in the blogosphere as they blogged about a shared interest.

The comparative and normative groups had both differences and similarities in the way they influenced the informants there are three main categories on how groups influenced the informants:

**Expert Power:** All informants seemed to search for bloggers with knowledge within the subject that they blogged about as they mainly used blog posts that were viewed as written by other consumers that had experiences with the product and this type of influence refers to as expert power that influences the consumer because they need credible information. This expert power did seem to influence the consumer throughout all the stages in the consumer decision making process since the informants only read blog posts by consumer with user experiences. One exception from this is during the post-purchase stage were informants had gathered enough information and experience on their own purchase as informants were exposed to expert knowledge as they search for ways to solve and discover potential problems with their purchase.

**Referent Power:** Normative groups seemed to have the ability to influence the informants with referent power; this was confirmed by the informants, who only were exposed to referent power in the case where they had a normative group in their blogosphere. A reason is that they had no desire to belong and thus would not adapt to the behavior of the group and the referent power exercised by normative groups, influenced informants in creating a need more than the comparative groups did.

**Reinforcement Power:**

Most of the informants were influenced by reward and coercive power from groups within the blogosphere, these influences provided the informants with confirmation both by normative and comparative groups. One thing it is discovered is that comparative groups within the blogosphere have the same ability to give confirmation on the informant's purchase as normative groups. So even though the informants were more willing to adapt to the norms of normative groups they valued the confirmation from comparative groups equally much as they got both positive and/or negative confirmation on their purchase from the members of the groups. Even though the informants did not write about their purchase, they could get positive/negative confirmation on their choice main reason for this is the faults with the purchase were not big enough to cause the group to condemn the purchase, so even though the group dislike the purchase it is still accepted. Confirmation was mainly given to consumer when they were in the post-purchase stage, when they had bought the product and wanted their experiences confirmed.

**CHARACTERISTICS OF INFLUENTIAL INDIVIDUALS IN THE BLOGOSPHERE**

What characterizes the individuals that the consumers are influenced by in their decision making?

What makes consumers turn to these specific individuals?

What do they focus on in their blogging, why do they choose this specific blog post to focus on?

**Opinion followers**

The most common character that is found in the blogosphere is opinion followers; these

people are ordinary consumers who have experience of the products that are discussed, the reason why the informants most often turn to opinion followers can be the large amount of opinion followers are being available online. The relationship between the informants and the opinion followers is characterized by rather weak ties, since they have little history of communicating and they lack emotional intensity. These weak ties, between consumers and the opinion followers, give the consumers problem in assessing the motives of the one who is providing the online word of mouth.

**Opinion leaders**

Some of the informants seemed to frequently return to certain bloggers and they claimed that they returned to these bloggers since they had up-to-date information and they shared vast knowledge within their area of expertise. For all the informants who had an opinion leader, the blogosphere constituted a normative group, in where the opinion leader had important influence but in these groups there were some exceptions that did not have an opinion leader due to two reasons; first the informant was a new member of the normative groups, thus sufficient time had not yet been given to find an opinion leader and another was an opinion leader himself within the normative group he belonged to. The rest were satisfied with the information provided by this blogger as the relationship is characterized by stronger ties then between consumers and opinion followers, however, it is still weak ties compared to real life.

**Opinion formers**

The use of opinion formers in the blogs is very rare, only few informants turned to these

characters in the blogosphere as majority did not trust the marketing oriented source of information.

### CHARACTERISTICS OF INFORMATION IN BLOG POSTS

Under this section the following research question will be analyzed;

What characterize the information in the blog posts that consumer choose to read?

In a general opinion a large amount of information is available online for the consumer and this is also confirmed by the findings in the present study, the blogs used by the informants all contained much information within specific topics, an interesting discovery was that the informants seemed to only pay attention to certain blog post, thus ignoring all the others. The chief characteristics of the blog post are developed below; Detailed, Up-To-Date, Credible and Similarity.

**Detailed:** The majority of informants listened to negative information on products and/or companies in blog posts and the content of these negative blog posts was characterized by detailed information. Most informants also seemed to pay attention to positive blog posts, however not in as large degree as they did with negative blog posts. The positive blog posts used by the informants were characterized by detailed information at a closer glance for detailed information in order to consider reading it. The reason why negative information in blog posts is used more by the informants is because they are often more detailed.

**Up-To-Date:** Many informants reported using blog posts that contained up-to-date information on the products that they blogged about and found this new information is easy to access due to fact that daily blog posts are arranged in reverse chronological order which made the latest blog post in the centre for the informants reading as it always is on top on the blog.

**Credible:** Blog posts written on company blogs were hardly ever used as all the informants claimed that they viewed marketing oriented sources as too biased and thus considered it dishonest as blog posts that were believed to be written by consumers are more credible than information coming from company sources. The reason for this was perceived credibility as consumers dared to criticize their own purchase which seems to have strengthened the trustworthiness of the information from the view of the informants.

**Similarity:** An important finding was that the readers need for similarity with the blogger but the informants didn't have a relationship with the online world, here relationship does mean that the informants did not follow the bloggers blog posts continuously however they are likeminded, this like-mindedness with the blogger can be divided in two types:

Most informants need a blog post that contains information regarding similar user preferences which means similar ways of using the product this corresponds the way that the informants thought they would use it and the blog posts showed similar user preferences.

In some cases, the informants had a need to identify themselves with the bloggers, in terms of preferences for product choices, this

happened when the information content in the blog post concerned more subjective information regarding the bloggers' opinions, thoughts and feelings.

## CONCLUSIONS

Blogs are a rapidly growing communication tool and companies can use this tool in order to make them more competitive in their environment, through blogging, company can build goodwill, discover new business areas, improve customer relations, enhance their brand, recruit competent employees, weather a crisis, and build customer support. The alternatives, how to use the blogosphere is huge and companies need to use blogs in an honest and down-to-earth; in order to earn customers attention and trust as the global development of different communication tools has made it more important for companies to manage word of mouth. Most companies care about what traditional media says about them, as well about the industry, competitor etc. but negative attention in media can be a great damage for the company and leading to decrease in revenues and market share for instance, in order to avoid this outcome most organizations monitoring traditional media, which can reveal what is sad about the organization, CEO, Industry, competitors etc. and today they need to include blogs. Companies need to react before it is too late to repair the damage if customers start talking negative about their products.

Blogs are tactic tools for marketing research which can help companies understand customer behavior and the blogosphere is essential because it is here the customer talk about companies, products and their daily life habits. Organization can also receive unique information on how they can improve their products in order to fit peoples' demands; the

first step in order to accomplish this is to take part of the blogosphere. Learning how consumers use blogs will be a great help for the market research as it can be cost efficient, compared to other methods since people that takes part in the blogosphere wants to talk about their experiences and marketers have a chance to listen to the ongoing conversations in the blogosphere and become aware of new trends and adapt to it earlier than their competitors. Blogs can also be used as a tool for companies to communicate with their customers and this study shows that customers want honest information, thus there is a need for the companies to start talking with their customers. Locating these groups and individuals in the blogosphere can open up business opportunities and thus find a new channel to reach their customers.

## FURTHER RESEARCH

During the process of this study several questions for future research have occurred, an interesting issue is to further develop this study by doing a quantitative study, to verify the conclusions from this research since this study has a rather narrow base of informants, it would be interesting to see if the findings are applicable to other groups of consumers as well. This question can further be developed to see if there are differences amongst nationalities, different age spans etc. It is most likely that different segment use blogs differently and in order to get a full coverage of the blog usage more research is needed.

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