A STUDY ON CONSUMER ATTITUDE TOWARDS CREDIT CARDS IN COIMBATORE CITY

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Abstract

The credit card business has become increasingly popular in India, thereby providing considerable scope for further expansions as an extension of banking service to the public and its customer. Indian consumer are relying more the plastic card. Which gives them money is credit rather than carrying cash and they have ample choices too. In the early stages its growth was very slow in terms of member and values. However in the recent past the scenario has changed dramatically. The number of nationalized and private banks issuing credit card has increased significantly. The study attempts to find the spending pattern, behavior of the credit card holders and factor influencing the customers in selection of credit card. This study also enables to trace out the problems faced by the credit card holders while using the credit cards.

Key Words: Credit card, Indian consumer, banking service

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Introduction

Banking is service-oriented industry providing a wide range of services to the people in their day-to-day operations. Today the problem of the people is complex and varies from individual to individual. Man created the credit system, but with the improvement in transport and trade, people become mobile and the creditability of the entire customer could not be established by all the sellers. The innovative humans once again come up with yet another brilliant idea of plastic money. The plastics money or credit card offers the convenience of providing on the spot purchase and eliminates the carrying of huge amount of cash. Credit card is a plastic card issued by a bank or an organization or clubs to the consumers.

The introduction of credit card by banks all over the world is considered as a major step,

the card has become a way of life in advanced countries. That is also fast catching up in developing countries like India. During 1914, a number of oil companies issued the first credit card to their customer for the purchase of gasoline, oil and accessories at the company's stations. Therefore, local departmental stores, railways companies also started issuing credit card. The Franklin national bank of New York was introduced in 1951. It is the first banks in the US to adopt a credit card plan around 1958.In the early stages its growth was very slow in terms of member and values. However in the recent past the scenario has changed dramatically.

In the mid 60's slowly but steadily, these credit instruments struck it roots. Diners club

was the pioneer in launching the credit in India during 1961. The first nationalized bank to enter credit card business was central bank of India, which launched its card in

august 1980.Andhra bank followed suit in next year. They are the innovations in the credit card business in India. Gradually other banks adopted this scheme. The number of nationalized and private banks issuing credit card has increased significantly. Credit cards are now not only an integral part of the consumer life in metros, but even residents of smaller cities and towns have taken to them. This can be attributed to the aggressive strategy of nationalized and private banks promoting cards in smaller towns and cities. The credit card business has become increasingly popular in India, thereby providing considerable scope for further expansions as an extension of banking service to its customer. Hence the study attempts to find the spending pattern, behavior and satisfaction of the credit card holders. The study was also trace out the problems faced by the credit card holders while using the Credit Cards.

Objectives of The Study:

➢ To study the frequency of usage and utilization of credit cards.
➢ To find level of satisfaction of credit cardholders
➢ To identify the problems faced by the credit card holders.

Methodology:

The research was carried out in Coimbatore city of Tamil Nadu. Convenient. Sampling method was used to select the sample. Sample size considered for this study was 200 respondents.

Tools Used For Analysis:

The following tools are used for the study,

1. Percentage analysis,
2. Chi-square test,
3. ANOVA (F-test),
4. T-test,

Findings of the Study

The findings of the study are presented in the following paragraphs.

Percentage Analysis-Personal Profile

Table-1 Personal Profile

Personal Profile	Classification	Frequency	Percent
Age	Up to 25 yrs	38	19.0
	26-35 yrs	87	43.5
	36-45 yrs	51	25.5
	Above 45 yrs	24	12.0
Gender	Male	141	70.5
	Female	59	29.5
Marital Status	Married	58	29.0
	Unmarried	142	71.0
Education	School	15	7.5
	Graduate	77	38.5
	Post Graduate	92	46.0
	Professional	16	8.0
Occupation	Business	83	41.5

	Employed	61	30.5
	Student	46	23.0
	Housewife	10	5.0
Monthly Income	Below Rs.10000	38	19.0
	Rs.10000-20000	105	52.5
	Rs.20000-30000	47	23.5
	Above Rs.30000	10	5.0
Family Size	Up to 2 members	20	10.0
	3 members	71	35.5
	4 members	82	41.0
	Above 4 members	27	13.5

Table-1 shows the personal profile of the respondents. Out of 200 respondents, 43.5per cent of the respondents fall under the age group of 26-35years, 70.5 percent of the respondents are male, 71per cent of the cardholders are unmarried. With regard to educational qualification of respondents 46 per cent of them are post graduate, 41.5 per cent of the respondents are doing business, 52.5per cent of the respondents are having monthly income of Rs.10000-20000, 41% of the respondents family size is 4 members

Credit card bank of the respondents

Table- 2 Credit card bank of the respondents

Banks	No-of respondents	Percent
ICICI	54	27.0
HSBC	21	10.5
SBI	49	24.5
CITI	8	4.0
HDFC	57	28.5
CANARABANK	7	3.5
OTHERS	4	2.0
Total	200	100.0

Table 2 shows that, 28.5% of the respondents are having the credit card in HDFC bank, 27% of the respondents are having the credit card in ICICI bank, 24.5% of the respondents are having the credit card in SBI bank, 10.5% of the respondents are having the credit card in HSBC bank, 4% of the respondents are having the credit card in CITI bank, 3.5% of the respondents are having credit card in CANARA bank and 2% of the respondents are having the credit card in other banks.

Frequency of purchase by using credit cards
Table-3 Frequency of purchase by using credit cards

Particulars	No of Respondents	Percent
Once in a week	40	20.0
Twice a week	51	25.5
Once in 2 weeks	78	39.0
Daily	12	6.0
Others	19	9.5
Total	200	100.0

Table 3 shows that, 39% of the respondents make purchase by using credit card once in 2 weeks, 25.5% of the respondents make purchase using credit card twice a week, 20% of the respondents make purchase using credit card once in a week, 9.5% of the respondents make purchase using credit card when needed and 6% of the respondents make purchase using credit card daily.

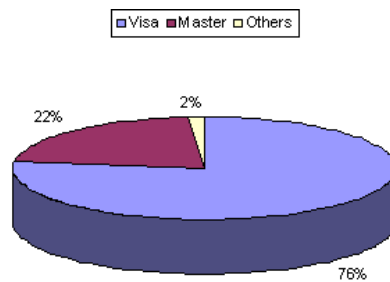**Types of utilisation of crédit cards**
Table-4 Types of utilization of credit cards

Particulars	No-of respondents	Percent
Durable/Non-durable	20	10.0
Hotel bills	28	14.0
Jewellery	31	15.5
Textile goods	42	21.0
Travel	5	2.5
All the above	74	37.0
Total	200	100.0

Table 4 shows that, 37% of the respondents utilize credit cards for multiple purposes, 21% of the respondents utilize credit cards for textile goods, 15.5% of the respondents utilize credit cards for jewellery, 14% of the respondents utilize credit cards for hotel bills, 10% of the respondents utilize credit cards for durable/ non-durable goods and 2.5% of the respondents utilize credit cards for travel.

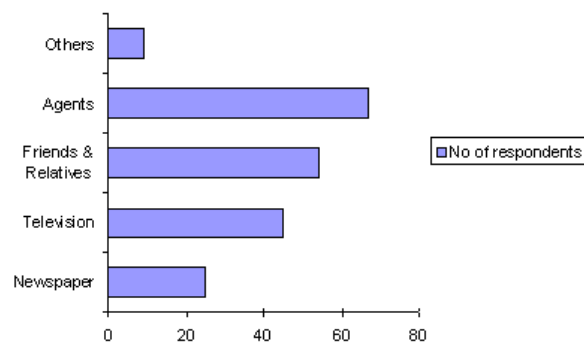**Type of Credit Cards**

Chart-1 Type of Credit Card

From the above chart it's clear that, 77 per cent of the respondents are having Visa card, 22 per cent of the respondents are having Master card and 2 per cent of the respondents are having other types of card.

Source of Awareness

Chart-2 Source of Awareness

The above chart-2 shows that, 33.5 per cent of the respondents aware about the credit card through agents, 27 per cent of the respondents are aware from their friends & relatives, 22.5 per cent of the respondents are aware through television, 12.5 per cent of the respondents are aware by newspaper and 4.5 per cent of the respondents are aware through other sources like pamphlets and notices.

Satisfaction of the respondents

Table-5 Satisfaction of the respondents

Particulars	Dissatisfied	Highly dissatisfied	Satisfied	Highly satisfied	Total
Billing	---	2(10)	155(77.5)	43(21.5)	200
Customer care	1(0.5)	2(1.0)	136(68.0)	61(30.5)	200
ATM	----	2(1.0)	136(68.0)	62(31.0)	200
Accessibility	7(3.5)	3(1.5)	137(68.5)	53(26.5)	200

Note – figures in the brackets indicate percentage

Table 5 clearly shows the degree of satisfaction towards credit card service. 77.5% of the respondents are satisfied with the billing, 68% of the respondents are satisfied with the customer care, 68% of the respondents are satisfied with the ATM and 68.5% of the respondents are satisfied with the accessibility.

Rank analysis-Difficulties faced while using the credit cards
Table-6 Difficulties faced while using the credit cards

Particulars	Mean	Rank
Membership fee is high	3.2400	1
Service charge is high	4.1500	2
Interest rate is high	4.4150	3
Delay in issue of Cards	4.4200	4
Problem in renewal	4.4350	5
Non-availability of Credit card. facility	4.4450	6
Misuse of Credit card	5.2150	7
Short period of payment	5.6500	8

Table-6 reveals the difficulties of respondents while using the credit card. The respondents have given rank 1 for high membership fee, rank 2 for high service charge, high interest as the third, delay in issue of cards as the fourth, problem in renewal as the fifth, non-available of credit card facility as the sixth, misuse of the credit card as the seventh and respondents have given rank 8 for short period of payment

Chi-square Test

Hypothesis I: There is no significant relationship between personal factors and frequency of purchase by using credit card.

Table-7 Personal factors and frequency of purchase by using credit card.

General factors	Calculated value	df	Significance/ No significance
Age	9.560	12	No significance
Gender	6.433	4	No significance
Education	13.344	12	No significance
Occupation	11.460	12	No significance
Family monthly income	29.966	12	Significance
Size of the family	15.974	12	No significance

Table 7 shows the result of chi-square test. It is inferred that the hypothesis is accepted with regard to age, gender, education, occupation and size of the family. So, it is concluded that the respondents have not influenced by those factors. But hypothesis is rejected in case of family monthly income. Hence the family monthly income has a significant influence on frequency of purchase by using credit card.

Hypothesis II: There is no significant relationship between personal factors and utilization of credit card.

Table-8 Personal factors and utilization of using credit card

General factors	Calculated value	df	Significance/ No significance
Age	17.162	15	No significance
Gender	13.067	5	Significance
Education	14.333	15	No significance
Occupation	33.984	15	Significance
Family monthly income	16.129	15	No significance
Size of the family	39.832	15	Significance

Table-8 it is inferred that the hypothesis is accepted with regard to age, education and family monthly income so, it is concluded that the respondents have not influenced by those factors. But hypothesis is rejected in case of gender, occupation and size of the family. Hence these factors have a significant influence on utilization of credit card.

T-Test

Hypothesis: There is no significant difference between gender in the average satisfaction scores.

Table-9 (a) Gender in the average satisfaction scores.

Gender	N	Mean	Std. Deviation
Male	141	13.0000	1.1276
Female	59	12.8814	1.2189

Table -9(b) T-test for Equality of Means

t	df	Sig
.662	198	Ns

Table-9 The t-test was applied to find whether there is significant difference between genders in the average satisfaction scores. The calculated t-test value is 0.662, which is less than the table value of 1.972 at 5% level of significance. So there is no significant difference between genders in the average satisfaction score. Hence the hypothesis is accepted.

ANOVA

Hypothesis: There is no significant difference among the personal factors in the average satisfaction score.

Table-10 Personal factors and average satisfaction score.

Personal factors	Particulars	Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	6.868	3	2.289	1.740	Ns
	Within Groups	257.887	196	1.316	_	
	Total	264.755	199	_	_	
Education	Between Groups	4.927	3	1.642	1.239	Ns
	Within Groups	259.828	196	1.326		
	Total	264.755	199			
Occupation	Between Groups	6.777	3	2.259	1.716	Ns
	Within Groups	257.978	196	1.316		
	Total	264.755	199			
Monthly Income	Between Groups	10.741	3	3.580	2.763	S
	Within Groups	254.014	196	1.296		
	Total	264.755	199			
Family Size	Between Groups	5.017	3	1.672	1.262	Ns
	Within Groups	259.738	196	1.325		
	Total	264.755	199			

Table-10 shows the results of ANOVA. It is clear that there is no significant difference between the age, education, occupation and size of family of the respondents and the average satisfaction score. Hence the hypothesis is accepted. In case of monthly income, hypothesis is rejected. So there is a significant difference between monthly income and average satisfaction score.

Conclusion

Gone are the days when credit card was the dream of middle-income group. Now credit card has been come affordable. But the question is how for the customers are using the credit card. The respondents are satisfied with consumer care given by the banks. They are facing a difficulty of high membership fee and service charges levied by the banks. Highest rates and service charges have made the customers to use the cards very occasionally and this has brought a negative impact in the minds of the customers. Measures like reduction of interest rate, penalty fees would pave way for better utilization. The study has given in depth knowledge about the present scenario of credit card. The study has also enabled to understand the various problems faced by the cardholders.

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"The conventional definition of management is getting work done through people, but real management is developing people through work. ~ Agha Hasan Abedi"

BINARY OPTIONS AND REAL ASSETS

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Abstract

As real options is a novel idea, which draws its concepts and principles from different disciplines, mainly from business administration, this paper conceptually links traits of binary options and real options in the broader sense. On hedging real assets, it seems that there is no clear hedging strategy that ideal; however, static hedging seems better as most capital projects require huge capital injection and implementation of prudent risk measures without incurring high costs. Furthermore, it can be inferred that binary options have similar characteristics as capital projects, especially venture capital projects, and research and development project. One such similar characteristic is that you receive more capital injection into the project provided that the preceding stage was a 'successful' one. Therefore, similarity illustrated that binary option formulas can be used to value some capital projects depending of prevailing circumstances.

Keywords: All or Nothing, Binary Options and Real Assets.

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Introduction:

Binary Options

These are options whose payoff is either fixed on some cash amount or asset or nothing at all if a certain requirement is not met. They are sometimes referred as to digitals "all or nothing options" or bet options. In essence the investor gets a specified payoff when the stock price ends above a strike price and nothing ends below it. A fixed amount, generally denoted by Q, is paid at time T when conditions are met. Notation $N(d_2)$ in risk neutral world indicates the probability of stock being above the strike price. Four main types of binary options are: the bet, asset or nothing, gap option and super shares. Binary option can either be of an American or European nature. Thus

American style option can be exercised any time until maturity but the European style can only be exercised at maturity.

However, this research report focuses only the on European, all or nothing binary option. They are cash settled with discontinuous payoff. Binary options are simpler than other exotic options but are very sensitive because of their *unique payoff patterns*. Most binary options are used in construction of structured products. According to Tompkins (2006), one known example is the construction of supershares portfolio done by Mr. Hakansson of University of California. Supershare is a portfolio that allows the owner to get certain dollar value, proportional to the assets of the fund. Another key thing about this portfolio is that the value of asset should lie between the lower and upper values at expiration.

The rest of the paper is organised as follows, section two is on pricing of binary options with emphasis on cash or nothing and asset or nothing, section explores dynamic hedging and static hedging on binary options, section four draws insights on binary options from previous research papers, section five links similarities between binary options and real assets and the last section concludes the paper.

Pricing of Binary Options

In all pricing of derivatives, it is assumed that there are no arbitrage opportunities. Zhang (1997:22) states that, "the arbitrage-free argument, or no-arbitrage argument, has been used to price all derivative securities". Binary option can be priced using Black-Scholes (1973) model (BS). The standard binary options are generally path dependent as it is shown by Reiner and Rubinstein's (1991) paper on pricing different options. Cox, Ross and Rubinstein showed that a binomial tree can be used price options especially asset-or-nothing binaries. More importantly, Rubinstein (1976) proved that arbitrage-free pricing for BS works under the following conditions; non-satiation, using a certain volatility of the underlying asset, for markets; there should be single-price law and marginal utility of consumption and the stock price are jointly log-normal.

The assumptions of the Black-Scholes-Merton model (BSM) need to hold in order to properly price all and put options. According to BS, a derivative that can be priced at any point in time, the following should hold; the expected return from the underlying asset is risk-free interest rate, r (i.e., assume $\mu=r$),

calculate the expected payoff from the option at its maturity and discount the expected payoff at the risk-free interest rate.

Variables that are affected by risk preferences of investors are not included in this equation (this is both strength and weakness). However, we know that an investor has expected return (μ) when taking certain risk level. Thereafter, μ drops out during derivation of the equation. Risk neutral valuation is more artificial than anything else. If we move back to a risk-averse world from a risk neutral then expected growth rate of spot price (S_0) should be taken into account and discount rate is used for any payoffs from derivative changes. The good thing is that there is offsetting effect when the two changes occur. For example, just like floating leg of the swap curve. Cox and Ross in their study in 1976, showed that you can find values of payoffs of European call options by discounting at maturity by the risk-free rate as long as the *long hedge position* is constructed. Their argument was based whenever constructed portfolio, which has contingent claim and its underlying in proportions and instantaneous return on the portfolio is *non-stochastic, risk-neutral valuation* relationship will result.

Cash or nothing

Cash or nothing can either be a put or call option. This option pays a Q when the stock price is below the exercise or strike price (X_t) and nothing when is above the X_t. The payoffs of cash or nothing for call and put are: $C_{cash} = Q \exp(-rT)N(d_2)$ and $P_{cash} = Q \exp(-rT)N(-d_2)$ respectively and Q is amount of cash to be paid. Where $d_2 =$

$$\frac{\ln(S/X)+(r-\frac{1}{2}\sigma^2)T}{\sigma\sqrt{T}}$$ as per BS model

(1973), where S is the stock price, X is the strike price, r is the risk-free rate, T to maturity of the option and σ is the standard deviation. The gamma in cash or nothing ranges between negative infinity and positive infinity. For hedging purposes, more work need to be done on cash or nothing. Only initial option premium is paid by the option holder for the bet.

Asset or Nothing

Asset or nothing can be a put option or call option, same as cash or nothing. Basically, it pays nothing when stock price ends below stock price and pays amount equal to the stock price itself if it ends up above the strike price. The payoffs asset or nothing for call and put are: $C_{asset} = S_0 exp\ (-qT)\ N(d_1)$ and $P_{asset} = S_0 exp\ (-qT)\ N(-d_1)$ respectively. Note that S_0 in this case is the stock price that is equivalent to the value of the asset. The rest of variables mean the same thing as in the case of cash or nothing-binary options, where

$d_1=$ $$\frac{\ln(S/X)+(r+\frac{1}{2}\sigma^2)T}{\sigma\sqrt{T}}$$ as per BS

model (1973). The variables mean the same thing as in cash or nothing except q (thus $q=b-r$) is the difference between risk-free rate (usually denoted by r) per annum and dividend yield per annum (usually denoted by b). Generally, the asset used as underlying is bought at zero. Greeks are undefined in both cash or nothing and asset or nothing. For asset or nothing, the option premium is paid when contract is initiated.

Hedging of Binary Options

It seems that hedging of exotics is much trickier than pricing them. Hedging exotics requires extensive knowledge about of advanced derivatives products and mathematics. Zhang (1997:639) says that, "applying the 'no-free lunch' argument, we may consider an additional difficulty in hedging exotic options-the 'trade-off' of the additional convenience in using exotic options to achieve specific objectives". Pricing and hedging of binary options goes hand in hand. Despite being one of simplest exotics, binary options are very difficult to hedge. For example, cash or nothing (CON) exhibits zero deltas for most underlying assets; however they (deltas) can be anything from zero to positive infinity around prices of underlying assets. Delta jumps around underlying prices creating undesirable shifts in portfolio values including options. Various risk managers developed different techniques to deal with that problem (causing undesirable shifts due to jumping) such as method developed by Bowie and Carr (1994). Their method, took portfolio replication into account, considered portfolio with long positions with infinite vanilla put options with strike higher than targeted CON put option. Mathematically, the method can be written as follows:

$PF\ (n) = n/2\ (P(K+1/n)-P(K-1/n))$, where K is strike price of targeted CON put option and $n/2$ is vanilla put options in a portfolio. From that formula, they showed that it could be re-written as follows when vanilla put options approaches infinity:

$Limit\ PF(n) = exp(-rT)\ N(-d(k))$

$n \rightarrow +\infty$

The key message behind the formula is that hedging binary options can be done through replication of the portfolio but it is not easy.

Dynamic Hedging

From BS model, we know that stocks (or shares) represent a *call option* on the company and gives the holder the right to sell them, thus exercise *put option* sometime in the future. This right can be replicated in a portfolio with weighted risky stocks, risk-free bonds or cash. Thus, an investor can own an investment portfolio with weighted different securities instead of having a call option on the company.

Within this portfolio calculation, long (representing short) delta amount of underlying asset and short (representing long) amount of risk-free bonds. Weights are directly affected by parameters (spot of the underlying, strike price of the option, volatility of the underlying asset, time to maturity of the option, interest rates and payout rate of the underlying) that affect BS model for pricing derivatives. Changes in weights are due to changes of the value of option. However, it should be noted that the changes in option value is due to the decline in option maturity and/or changes in the price of the underlying asset. Resulting in a portfolio is called 'dynamic replicating portfolio' as changes in weights are dynamic. Hedging of dynamic portfolio is done through dynamic delta of underlying asset

against long position in option. We know that continuous hedging is almost impossible and costly. Transaction costs are one of reasons that lead to compromised dynamic hedging.

Static Hedging

Weights are fixed in a portfolio and no adjustment is necessary when doing static hedging. It seems that it (static hedge) was motivated by limitations of dynamic hedging. Derman, Ergner and Kani (1994, 1995) did a lot of work on this type of hedge. There is a lot of intuition in this method, based on the fact that targeted option can be replicated by vanilla options and underlying asset. Therefore the price of target option should be the same as the price of structured portfolio of vanilla option. The need of not structuring weights of portfolios and very small transaction costs are some of the advantage of this technique. However, there are shortcomings of this technique as well; only in special circumstances, can target portfolio be replicated by a few vanilla options and key assumption is that the perfect liquidity for constituent vanilla options. Thus, a number of vanilla options with different strikes and maturities are hard to find as there is no organized market for these instrument (vanilla options).

According to Tompkins (2006), the static hedging is more beneficial for cash or nothing in relation to dynamic hedging; however, static hedging costs more than dynamic hedging.

Table below support statements about static versus dynamic hedging:

	Dynamic hedging	Static Hedging
Transactions Costs	0,70%	5,20%
Stochastic Volatility	31,30%	24,80%

Source: Tompkins (March 2006)
Table 1

Insights on Binary Options

Recently, RBC Capital Markets division issued articles about European binary options (on both call and put) on currencies. Trader whose currency position is appreciating would buy a call to receive fixed payout as long as the spot price lies above exercise price. The key thing is that at expiration the option should be *in the money* regardless of what happened during life of the option. Traders do a lot of adjustments on their positions such that at expiration hopefully the call will be *in the money*. Adjustments include adding a *one-touch feature* and instant *one-touch feature.* One touch feature requires the writer to pay a certain amount at maturity, should the spot trade at strike during life of the contract. The latter requires instant payout as soon as the spot touches the strike. It is possible for traders to set four option variables: payout amount, binary strike, volatility and maturity. Strategic seller calculates premium costs. The strategy incorporates looking at a ratio of amount to be paid and to be received. Traders who want to have a higher payout by pushing the option to *in the money* on expiration have to pay for higher premium.

For the binary put option, everything is the same as in the case of the call binary option except that the trader will hold a view of depreciating currency on his or her position.

Gorvett (1999) looked at development of new structured products because of securitization within insurance industry. Structured products are designed according to what a company what to transfer or eliminates from its financials. One kind of structured product designed with insurance industry is *catastrophe equity put*. This product simply gives the insurer the right to sell to investors at agreed upon price in case a catastrophe occurs. Thus sales takes place after a certain catastrophic event has occurred. It is in this regard that catastrophe equity put can be seen as digital. Like all digitals, should nothing happen, the insurer cannot exercise his or her right to sell.

Glibitsky and Tompkins (2000) examined complex binary barrier options. Their paper shows that the payoffs of binary barrier options as standard digital options. This is due to the fact that their (standard digital options and binary barrier options) payoffs are only at the expiration date. However, standard binary options'payoffs depend on barrier being breached at anytime, while binary barrier options are path dependent. Both barrier and binary options trade over-the-counter and are less expensive to other corresponding regular options. At time "zero", barrier options (call and put) can be calculated using the normal BS formula for call and put.

Glibitsky and Tompkins (2000) say hedging of barrier options can be done in many ways. There is a choice between static and dynamic hedging for barrier options. For static hedging, the writer has to unwind his hedge as soon as the triggered level is breached. The more levels are triggered the more unwinding is needed. Sometimes the situation can force the writer to unwind when the market is closed. In essence, the costs increase with unwinding. Dynamic hedging seems more problematic than static hedging for barrier. Every time a new level is triggered, the Greeks change signs and sometimes changes might be continuous. The

higher the monitoring of digital barrier options, the higher the chances of being knocked out. At the same time the option gets cheaper with more chances of being knocked out. This is not case with standard digital options. It seems that static hedging works fine for both binary barrier options and standard digital options, refer to the table below:

Hedging: Barrier Options (i.e. Down and Out Call)		
	Static Hedging	**Dynamic Hedging**
Transaction costs	-0.06%	-7.30%
Stochastic volatility	0.00%	18.40%

Source: Tompkins (March 2006)
Table 2

Architzel (2006) compares digitals to event markets in his paper. His analogy is based on the notion that an event either happens or does not happen. It is in this regard that digitals and event market are similar. The underlying for digital can be commodity or financial instrument. For event markets, underlying can be political events, natural effects or even sporting events. He goes as far as saying that selecting of a Pope might be seen as a digital. Iowa Electronic Markets (IEM) is an example of a market that equates of political events to digitals according Architzel (2006). From 1988, IEM started predicting outcomes of various proceedings given that certain events may occur. Since 2004, event markets have become designated markets contracts that are enforceable. Despite that markets can share the same market event; they may not have the same level of social utility. This can be related to structured products that are embedded same digitals but not appealing in the same way to audience at large. It seems that it is more about how individuals view a certain product than how it (the product) is designed.

Tompkins (1999) did looked at binary options in his paper on simple exotic options and replicating portfolios of European options. His definition of binary option is the general one that we know but emphasis is on underlying market finishing either above or below a certain strike in the future. On all or nothing binary options, the path taken by underlying over option's life is important. Tompkins (1999) compares a standard European option and digital option. He says the key difference is discontinuity degree that occurs at striking price. European option looks like two lines joining at 45^0-degree angle while three lines joining at two 90^0-degree angles for digital option. Replication strategy with position in underlying and risk-less bond is complicated by the fact that different degree angles occur as strike price is approached from either side. Despite this, European option with different striking prices work but for cash or nothing digital option is not clear whether replication strategy would work. Combining different digital options might give rise to a new different option.

Investment houses can create investment portfolios that include other securities. For example in capital markets, products with interest bearing securities are offered to different clients and normally known as *corridor options*.

If the underlying is the only driver of the payoff of the option then it is easy to price a digital option. According to Tompkins (1999), pricing is an extension of Black and Scholes (BS) technique taking into account that dividends have to be adjusted. Prices of the bet and asset or nothing are the same according Tompkins (1999) as it is shown earlier in this paper.

Since pricing of digital options is an extension of BS, one would expect that strategy outlined by BS for European calls would apply for hedging these products. However, it seems not to be the case because shapes of these products also resemble other products. For example, figure 3 payoff of the bet resemble shape of values taken by delta of standard call option at expiration. It seems that gamma of European call times payoff is equal to the delta of the bet. Gamma of the bet is close related to third order derivative of the option to the underlying according Tompkins (1999), which is called the speed of the option. Popularity and availability of these products should make possible to use other hedging strategies that are not related to BS.

Botteron (2003) looked embedded options within start up in venture capital projects. He says that each investment is triggered by objectives of an investor. There are higher losses when a project has reached advanced stages of development than when it is a start up. In my opinion, the loss at initial stages is the amount initially invested. It is this regard, that investor gets nothing when the venture capital project goes sour than when it is successful. Success is based on a certain success of some future event. One option that

has similar characteristics to the last two statements of this paragraph is the digitals or binary options. Venture capital projects are very risky but certainly attractive. These projects should be structured and timed in such a way that losses are minimal. Research and development (R&D) is another area where rewards of the project are contingent on some future event. Non-occurrence of that event leads to an investor not getting anything. Initial capital (both in R&D and venture capital) to me seems as the premium paid to acquire an option. Having specific stages within an investment taking in conjunction possible success of the next stage eliminates most unnecessary losses. The project continues to the next stage when only the current stage shows that the next stage has probability of being successful. The reward at different stages prior to the final can be seen the *indication of successes to the next stage*.

In his paper of static versus dynamic hedging of exotic options: an evaluation of hedge performance via simulation, Tompkins (2002) did look at hedging for digital options. Under digitals, he focused on *the bet*. He says that on average, results of dynamic hedging are more or less the same as Table1 (see page: 6 of this paper) for European call option. However, the real situation (for example market scenarios) proves to be volatile. According to Tompkins (2002), at expiration of digital option, $N(d_2)$ approaches the value of $N(d_1)$. It seems that gamma of European call is related to delta of the digital option as stated by Tompkins (2002). He suggested that static hedging seem to be a better option than dynamic hedging as shown by the following results.

Stochastic Volatility	Dynamic Hedging	Static Hedging
Transaction Costs	-5,30%	-0,20%
Standard Deviation	35,30%	24,80%

Source: Tompkins (2002), Pages: 13 and 15
Table 3

Transaction costs of hedging seem to be lower when volatility is constant than when it stochastic. This might be due to the fact that transaction costs are only incurred when unwinding at expiration and when vertical spread is established given that the volatility is constant. Hedging variability in simulations when volatility is stochastic is reduced through static hedging. Basically, from this paper we can say that different hedges work in different scenarios depending on the type of volatility (for example. constant vs. Stochastic) and assumed volatility distribution. The general view is that static hedging seems to less costly.

Ingersoll, Jr. (2000) says that pricing formula for digital contracts seem to be product specific or specialized in his paper of digital contracts: simple tools for pricing complex derivatives. However, slight change to a formula can make it easy to calculate other related products. He comes up with a formula of pricing pure European digital, all or nothing.

Formula is:
$$\sum_i a_i D(S,t;T;\varepsilon_i) + \sum_j b_j S(\overset{*}{S},t;T;\varepsilon_j)$$

Source: Ingersoll, Jr. (2000), page: 68

Where $D(S, t; T; \varepsilon_i)$ is the value at time t of receiving \$1 at the time T maturity date, if and only if the event ε occurs; $S(S, t; T;\varepsilon)$ is the value at time t of receiving one share of the stock at time T (excluding any intervening dividends), if and only if the event ε occurs. In general the probability of ε depends on the current stock price, so the values of D and S also depend on $\overset{*}{S}$.

Ingersoll, Jr (2000) argues that a contract such as $D(\cdot)$, pays a fixed amount upon occurrence of some future date. A digital option of this nature is called cash-or nothing option. The other contract for $S(\cdot)$, which converts to a share of stock if some event occurs, is called all or nothing share. If we have an asset or nothing, the formula has to be adjusted to take into account features of asset or nothing. For example, dividends that might be paid during the life of the asset which were initially not taken into account. Ingersoll (2000) says that the delta of digitals can be easily determined. The total delta would be individual sum of deltas at different points and times. In conclusion, Ingersoll (2000) shows that in valuing a digital option, in a yield curve easily handled by using a default-free, zero-coupon, $B(t, T)$ instead of the discounting term $e^{-r(T-t)}$. Binary options do have

characteristics that are similar to other options.

Implications for Real Assets

By implications for real assets, it is meant that whether or not there are any real assets that have digitals' characteristics. Reading different papers on binary options, it seems that there are digitals in embedded in capital projects especially in research and development (R&D) and venture capital projects. However, most exotic options are used in the designing of structured products packages. Capital projects are based on the success of a certain project in the future. As stated earlier, initial capital invested can be equated to the premium that the option writer pays in order to have the right. For example, a mining company will resume its operations when the gold price is at US$400/oz. It is known that they only pay upon occurrence of some future event. In essence payment on some future event occurrence is characteristics that digitals and capital projects have in common. It is in this regard that an embedded option in a capital project can be seen as digital. However, that digital might have some extended features.

Within R&D and venture capital projects real options exist at different stages of the project. Investors in these industries would normally allocated funds according to the different stages. For example, the movement to second stage is contingent on the success of the first stage. Thus a digital might be present only at the first stage not on the other following stages. Most capital projects irrespective of industries are initiatives of individuals or groups. In all instances, mostly people have a common goal. If we take the common goal as a single asset or security, indirectly capital projects have similar characteristics with financial assets.

In Grenadier (2000), Williams J. T. talks about equilibrium and options on real assets using real estate. Grenadier (2000:71) says that, "when viewed from the perspective of a single developer with a single undeveloped asset, real options have many characteristics in common with financial options". Hence, it is not surprising that capital projects, for example venture capital projects, have characteristics of digitals.

Conclusion

There are other hedging techniques that used for digitals other those related to Black and Scholes formula such simulation and portfolio replication account method developed by Bowie and Carr (1994). It seems that there is no clear-cut technique that we can identify as the best hedging strategy for digitals but one technique works better than the other in different situations. For example, for digitals static hedging seems to more advantageous than dynamic hedging but it is still costly to use it (static hedging) as illustrated by Tompkins (2006) in table under 2.2 on static hedging.

There is no doubt that capital projects especially R&D and venture capitals have characteristics similar to digitals. However, digitals within capital projects might prevail at specific time of the life period of the project. At the same time it is important to bear in mind that not every capital project has digitals. Within capital projects, the success of the next stage of the project seems to have a positive relationship with its

prior stage. Allocating capital at various stages is one strategy of minimising risks within capital projects. However, at the moment digitals are mainly used in designing structured products than in valuations of capital projects.

Capital projects are different from each other. Therefore, there is no asset that exactly replicated another capital project.

The complexity and the size of projects, makes sense that hedging to be applied per stages. Stages generally take anything from six months to a year or more. A lot of valuations and due diligence are done so that to have a good view of what will happen over a reasonable period so that decisions correspond to a particular period. It is in this regard that static hedging seem reasonable than dynamic hedging for capital projects.

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SOUTH AFRICAN EQUITIES MARKET AND STOCK MARKET CRISIS

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Abstract

The research report analyses performance of certain Johannesburg Securities (JSE) Exchange of South Africa during financial market crisis. The essence of the study is to see which stocks performed poorly and which stocks were resistant to the financial market crisis. There seems to be no clear cut rule of thumb that says particular stocks within a specific sector performs well; however, mid-caps indices have some resistance as their constituents are mainly defensive stocks. The empirical studies illustrates that JSE performed poorly overall and this kind perform is consistent with what many stock exchanges experienced during financial crisis.

Key words: Defensive stocks, subprime mortgage financial crisis and equity performance.

JEL Classification: C1, G1, G2.

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Introduction

Most studies on subprime mortgage financial crisis confirmed that equities related investments tend to perform poorly; however, there might be exceptions in certain cases. It seems that there is a psychological behaviour problem on how one should react to his or her existing investment portfolio as illustrated by some empirical studies such as Shiller (2000). Shiller (2000) went further to state that during financial crisis time, investors prefer to invest their wealth either in cash or real assets such real estate. One advantage of investing in real estate is that while you earn periodical rentals on your property, there is capital appreciation that accrues over time on the property.

Although, real estate seems to be one asset class that is favoured by most investors during financial crisis; however, some empirical studies do advocate investing in other securities such as treasury bills as explored by Patel and Zechauser (1987). Furthermore, demand and supply of various assets change during financial crisis periods as indicated by the empirical study by Tong and Wei (2008). In principle, the investment manager should be able to best allocate investment portfolios during crisis.

The rest of paper is organised as follows; the second section explores explore some variables' movements during financial crisis, section three distinguishes between financial and real assets, section four outlines on the data used this empirical study, section five is

on empirical results and the last section concludes the research report.

Literature Review

Some Indicators during Financial Crisis Periods
Macroeconomic Environment agree

Macroeconomic variables such as real exchange rate (influences the trading), current account (relates to the level of spending during a financial crisis), overall growth of an economy (growth horizons before, during, and after the crisis) give an indication of an economy's strength, weaknesses, and attractiveness. So far, it seems that empirical studies on macroeconomic state performance and financial crisis explored mainly developed markets with little emphasis on emerging markets.

Quintos (2004) explored the extremal (it means having a major impact or effect) behaviour of emerging markets bonds in relation to equities and bond returns of developed markets. In her expedition to crack the falsehood about how returns on emerging markets fixed income investments are known to behave like equity returns, she brings to light the effect which an economy's size (determined by the macroeconomic composition) affects returns. Quintos (2004) states emerging markets have got more risks relative to developed ones in terms of volatility, skewness and kurtosis as well as extremely risk.

Kaminsky, Lizondo and Reinhart (1998) analysed the ability of macroeconomic variables to predict financial crisis. They report that the extent to which a variable deviates from its normal trend beyond a certain threshold may be interpreted as the power of that variable in predicting a crisis. The rule of thumb is that high risk exposure equals high rewards and consequently high losses should a crisis occur.

Sentiments

Shiller (2000) distinguished between two types of investor attitudes; first he describes the bubble expectations as the perception of a temporary uptrend by an investor which prompts him or her to speculate on the uptrend before the bubble bursts, then he describes the investor confidence as the feeling that nothing can go wrong with an investment, that there is no need to worry. Although, he attempts to find one, he agrees that there is actually no reliable measure for these variables. Through the use of questionnaires, he was able to construct indexes and monitor the variations and effects among these factors of stock prices. Results of Shiller's (2000) empirical study were that, these factors as he defined them for institutional investors, do vary through time, but shows that, although these variations are significant, they are minimal.

Focusing on financial crisis, Gyntelburg et al. 2008 investigated the effect that the investor sentiments had on the company performances and consequently the stock's performance. Comparing the performance before and during the crisis, they found that prior to the financial crisis the stock prices were driven to large extent by the local investor sentiments and that during the crisis they were driven to a considerable length by the foreign investor sentiments.

Liquidity Preferences

The liquidity constraints become the most worrying factor during financial crises. Liquidity is a variable that is controlled by a wide range of people at various levels and various with time. The two stakeholders mainly affected by this variable are the governments and banks. Actions by these two parties to protect their liquidity requirements normally affect borrowers noticeably. High liquidity pressures push the authority to raise the required reserve ration which reduces the amount of cash in circulation. Most of the research papers on the financial crises performance of the markets have liquidity pressures as the underlying determining factor of survival for the financial corporations.

Government actions in times of financial crises are centred on the liquidity tightening, and this creates a lot of expectations build up by the investors which ultimately influences the markets. Tong and Wei (2008) explore on the real effects of the subprime mortgage crises, studied how the subprime crises may spill-over from the financial sector to the real economy and if the spill-over manifests itself through the liquidity constraint as a supply-side effect or through the reducing consumer demand and confidence.

Furthermore, Tong and Wei (2008) compared the liquidity effects on non-financial firms to those on financial ones. Tong and Wei (2008) concluded that liquidity is very important in explaining cross firm differences in stock price declines. This was found after applying valuation measures including

$$dependence\,.\dot{}\,on\,.\dot{}\,external\,.\dot{}\,finance = \frac{(capital\,.\dot{}\,\exp enditure - cash\,.\dot{}\,flow)}{capital\,.\dot{}\,\exp enditure},$$

Fama-French and Multi Factor Models setup as $stock\,.\dot{}\,return = \alpha_0 + \beta_1 DemandSensitivity_i + \beta_2 FinancialConstra\operatorname{int}_{i,t-1} + \varepsilon_{it}$.

Tong and Wei (2008) concluded that while liquidity constraint and demand sensitivity measured by the Whited-Wu (2006) index and by a firm's stock price reaction to the September 11, 2001 terrorist attacks respectively, have statistically significant power in predicting stock price movement during the subprime crisis period, placebo tests suggest that they do not predict stock price movements in a period shortly before the sub-prime crisis broke out. They also find that the other measure of a firm's dependence on external finance as proposed by Rajan and Zingales (1998) and values calculated by Tong and Wei (2008) based on information during 1990-2006 also had predictive power about stock price movement during the subprime crises.

Exports and Non-Exporting Firms

The trade theory can be used to explain how exporting firms should outperform non-exporting firms during a financial crisis. This hypothesis has been supported by vast

researches including publications by Gyntelburg et al. 2008 and by Blalock et al. 2005. Gyntelburg et al. 2008 list three conditions under which the hypothesis might not hold and they are; where foreign leverage effect outweighs the competitive urge received from the situation, where there are increased input costs through imported inputs, and where the major trading companies devalues their currencies to lighten the exchange rate effect.

Gyntelburg et al. 2008 explain that the extent to which an exporting firm will benefit from a financial crisis as compared to a non-exporting financial firm is affected by how much the foreign debt cost increases relative to how much it benefits from increased competitiveness. Because input costs escalate total costs, an exporting firm which imports inputs may not be able to enjoy increased opportunities, and as the previous currency levels are matched, the possible benefits are reduced. Although the research reveals that the impact of these situations can significantly affect the hypothesis, it still concludes that local equity markets (i.e. South East Asian markets) favoured exporters in the periods leading to the devaluations. They also found that equity markets in other markets sample countries reacted by favouring exporters immediately after the devaluation of the Tai Baht.

Blalock et al. yes 2005 stated factors such as the alternative sources of funding and the leverage are affected directly affected by financial crisis. Blalock et al. 2005 monitored the value added, employment, and capital level variations between these two types of firms. In addition, Black et al. 2005explored on how exporting firms do outperform non-

exporting firms during a financial mayhem. It seemed that exporting firms enjoying a reduced liquidity constraint as compared to non-exporting ones. Exporting firms enjoy a lesser liquidity constraint because of the multiple sources of funding available to them. Furthermore, exporting firms are able to obtain funds through their foreign partners or multinationals. This shows how type of ownership influence positively in the acquisition of finances for a firm. Foreign owners are likely to put money into exporting firms during a crisis than in an importing firm. The cases they investigated as differentiated by ownership, business orientation, and performance could be laddered in this manner; high returns [foreign owned exporting firm, domestically owned exporting firm and domestic owned (private ownership) exporting firm] and low returns [domestic owned (government ownership) exporting firm].

Crisis Impact on Real and Financial Assets

Financial assets are assets whose values are mainly affected by people's perceptions within the financial markets while real assets' values are affected by financial market fundamentals. Sometimes, market commentators make a big mistake of using financial market perceptions to evaluate value changes of real assets despite the fact that there are not many empirical studies supporting the relationship between real and financial assets.

Ketcham, Rubens and Yobaccio (1994) analysed how real estate investment trusts (REITs) can be used in inflation-hedging strategic environment. REITs are listed real estate instruments that derive their value from physical properties. These properties

might be residential, commercial, retail or industrial ones; however, there are a few REITs made up of residential properties as residential properties have the highest cost to income ratio of all the properties. REITs are positively correlated to equities and fixed income securities as opposed to physical properties as indicated by Acheampong et al. 2002 and O'Neal and Page (2000).

In Ketcham et al. 1994, different types of REITs (equity REITs, mortgage REITs and hybrid REITs) had a high positive correlation with government bonds, treasury bills and common stocks as opposed to physical real estate. Ketcham, Rubens and Yobaccio (1994: 286) "Generally, the coefficients on expected inflation are positive and near 1, especially in the case of mortgage REITs. This indicates that REITs offered some hedging potential against expected inflation". Furthermore, the empirical study confirmed that REITs irrespective of their underlyings, are hedges against both expected and unexpected inflation. In principle, financial assets' movements are mostly influenced by financial market perceptions as opposed to financial market fundamentals.

Bond and Webb (1995), and Bond and Seiler (1998) compared performance of real and financial assets in relation to inflation changes, while Patel and Zeckhauser (1987) researched about the reaction of treasury bills in relation to changes in inflation rates. Bond and Webb (1995) stated that literature on the inflation-hedging support that notion that real assets act as an inflation hedge while financial assets do not act as inflation hedge instruments, while Bond and Seiler (1998) stated a diversified investment portfolio decreases volatility of the overall portfolio

during unforeseen financial market conditions. The empirical study of Bond and Webb (1995) was based on the formula, $M^*V = P^*Q$, developed by the Board of Governors of the Federal Reserve System. In the formula, P^* is the predicted price level generated, M is the $M2$ money supply, V is the long-run $M2$ velocity of money, and Q is the level of real potential output. It was assumed that P^* is a critical level that indicated whether investment strategy is a simple-buy-and-hold approach to investing in real estate properties.

In conclusion, Bond and Webb's (1995) empirical study confirmed that real assets' values are affected by fundamentals while financial assets' values are affected by financial market perceptions. However, in order for real estate to act as an inflation hedge, the market supply and demand should be in balance. Using the added variable regression methodology (AVRM), Bond and Seiler (1998) confirmed that residential properties' returns are independent of financial assets' movements. Bond and Seiler (1998: 336) state "the results indicate that both expected and unexpected inflation are significant components of residential real estate returns". In interesting, Patel and Zechhauser (1987:2) found that treasury bills reduced inflation risk by about 30% to 40%.

Devaney and Rayburn (1988) researched about 'when a house is more than home'. In principle, house according to Devaney and Rayburn (1988) was a real asset investment that the investor wants to own over a long period of time. In essence, house ownership is more like wealth accumulation as opposed

to a widely held view that houses are acquired for consumption purpose.

Other than high rates of return that can be earned from physical property investments, physical properties can act as an inflation hedge and has low correlation with most financial assets. Therefore, when an investor wants to diversify his or her investment portfolio, inclusion of physical property in an investment portfolio contributes to overall diversification of an investment portfolio. Devaney and Rayburn (1988) stated that physical property investment were major portion of investments in the United States of America (USA). The empirical study was based on data collected from single-unit residential transactions for the city of Memphis and Shelby County, Tennessee. Analysis of variance (ANOVA) procedure was used to indentify prices of extreme values and discounted cash flows (DCFs) methodology was used to calculated values of various residential units at that time. The correlation coefficients between submarkets were calculated and ranged between 0.80 and 1.00.

The results indicated that all correlation coefficients were significantly different from zero and the microeconomic environment had strong impact on local properties as opposed to macroeconomic environment. Comparing six portfolios of real estate, stocks, treasury bills and treasury bonds; real estate had the highest returns. Furthermore, efficient frontier A (EF_A) (made up of all assets) and efficient frontier B (EF_B) (made up of all assets excluding real estate) showed that EF_A's returns are higher than EF_B's returns. Therefore, the inclusion of real estate in one portfolio

enhanced its returns versus the other portfolio that had no real estate included in it. In conclusion, the returns on physical properties were driven by fundamentals as opposed to financial market perceptions.

Data

The following indices were downloaded from *I-Net Bridge data source*; Johannesburg Securities Exchange Top 40 ($Top40$), Johannesburg Securities Exchange Resource 20 ($Res20$), Johannesburg Securities Exchange Financial 15 ($Fin15$), Johannesburg Securities Exchange Industrial 15 ($IND15$), Johannesburg Securities Exchange Small cap (Sma_Cap) and Johannesburg Securities Exchange Medium Cap (Mid_Cap) from January 1998 to November 2008. The subprime mortgage crisis started sometime in *August 2007* and it would be expected that could not withstand the crisis' impact to under form that point the stocks that could withstand the crisis to perform steadily or better.

There are a lot of indigenous and exogenous factors that affect indices in a lot of different ways as such; it would not make sense to compare the indices as they are. The ordinary least squares (OLS) technique will be used to estimate the residuals (ε_s) of each index. The following OLS formula will be used; $\gamma = X\beta + \varepsilon$, where γ is the dependent variable, JSE indices, β is the beta of the linear regression and X is the independent variable, similar related index to JSE indices. In this case, JSE indices are seen as stock movements that aggregate periodically and similar related index are modelled by different institutions, although some might

not respect JSE indices 100%. In calculating the residuals; the x values and y values were based on the following indexes and share prices:

Y variables	X variables
(ALSH) All Share Index	All share-price
TOP40	All share-price
RES40	Share price-resources
(FIN15) Financials Top 15	Share price-financials
IND15	Share price-industrial
SMALL_CAP	MSCI-emerging markets free index
MID_CAP	MSCI-emerging markets free index

There might be disparities between the x variable and y variable; however, the relationship between variables was assumed to be a fair representation.
Source: I-Net Bridge

The graph show log normal returns from August 2007 (approximation), the JSE indices started moving downwards and that time, subprime mortgage financial crisis started to be imminent across the world. Prior to the subprime mortgage financial crisis, there was a general upward movement by the JSE indices.

"If you pick the right people and give them the opportunity to spread their wings—and put compensation as a carrier behind it—you almost don't have to manage them. ~ Jack Welch"

PARAMETRS	ResidualL_ALSH	Residual_TOP40	Residual_RES20	Residual_FIN15	Residual_IND15	Residual_SMALL_CAP	Residual_MID_CAP
Mean	86.71277778	-988.2976984	4340.215079	-5201.680476	-1263.029762	-31854.47492	-30014.975
Median	-44.94	-906.825	3318.545	-4318.69	-1118.455	-27200.175	-25435.685
Maximum	2855.26	529.38	15755.14	-2274.78	517.36	-13840.92	-13379.79
Minimum	-1897.64	-2586.07	264.11	-10195.76	-3563.43	-73889.68	-74676.89
Std. Dev.	796.0807334	569.665663	3464.961557	1972.361309	943.5153753	14371.85244	14713.94009
Skewness	0.588076213	-0.581456264	1.144538001	-0.96344174	-0.478937212	-1.226610111	-1.34693828
Kurtosis	3.787804419	3.611666792	3.571095999	2.800203879	2.530132553	3.721704005	4.105899054
Jarque-Bera	10.52084424	9.064134522	29.22160279	19.7021918	5.976068851	34.33051717	44.51991413
Probability	0.005193112	0.010758413	4.51E-07	5.27E-05	0.050386378	3.51E-08	2.15E-10
Sum	10925.81	-124525.51	546867.1	-655411.74	-159141.75	-4013663.84	-3781886.85
Sum Sq. Dev.	79218066.76	40564870.95	1500744824	486276141.7	111277657.9	25818767833	27062504124
Observations	126	126	126	126	126	126	126

Source: I-Net Bridge – February 1998-November 2008 Data used is from February 1998 to November 2006

The sample size is large enough (i.e. $sample\_size > 30$) such that the results of the sample study converge to a normal distributed curve. Means of the residuals of various JSE indices are negative in relative terms, meaning that indices did not perform well in relative terms. Residuals are skewed to the negative side of the distribution curve except residuals of ALSH and RES20. In principle, the indices did not perform well for the period from February 1998 to November 2008. The Jarque-Bera (JB) test for normality show that each distribution of the JSE index is not normally distributed as JB values are all greater than five. Therefore, the JB test is confirming that the distribution curves are not normally distributed as confirmed by skewness test earlier. All the variables are statistically significant as their alphas are less than 10%.I agree

PARAMETERS	Residual_ALSH	Residual_TOP40	Residual_RES20	Residual_FIN15	Residual_IND15	Residual_SMALL_CAP	Residual_MID_CAP
Mean	1234.693846	-1122.712308	11250.63538	-8269.633077	-2150.872308	-64844.74308	-64803.1
Median	1160.67	-966.1	10960.79	-8368.15	-2380.92	-64807.29	-65099.74
Maximum	2855.26	529.38	15755.14	-5981.44	-699.2	-57276.58	-56129.05
Minimum	245.09	-2470.31	8011.02	-9852.97	-3481.89	-73889.68	-74676.89
Std. Dev.	707.1038087	762.5561803	2290.65068	1188.631558	927.4935356	5216.39629	5613.169753
Skewness	0.949751171	0.274409687	0.346198759	0.352242626	0.128644589	-0.181841417	-0.095262024
Kurtosis	3.36850272	3.203447571	2.286134656	2.062603556	1.660066555	1.880367191	1.978975211
Jarque-Bera	2.027947677	0.185571544	0.535718112	0.74479793	1.008377153	0.750664866	0.584345142
Probability	0.362774504	0.911388724	0.765015598	0.689079269	0.603995473	0.687060839	0.746639676
Sum	16051.02	-14595.26	146258.26	-107505.23	-27961.34	-842981.66	-842440.3
Sum Sq. Dev.	5999949.556	6977903.138	62964966.48	16954139.76	10322931.1	326529483.1	378092096.1
Observations	13	13	13	13	13	13	13

Source: I-Net Bridge – August 2007-November 2008 Data used was from August 2007 to November 2008

These results confirmed what happened after the subprime mortgage financial crisis in August 2007. The sample size is not large enough (i.e. $sample\_size \angle 30$) such that the results of the sample study converge to a normal distributed curve. Means of the residuals of various JSE indices are negative in relative terms, meaning that indices did not perform well in relative terms. In principle, the JSE indices did not perform well for period from August 2007 to November 2008. The Jarque-Bera (JB) test for normality show that each distribution of the JSE index is normally distributed as JB values are all less than five. Therefore, the JB test is confirming that the distribution curves are not normally distributed as confirmed by skewness test earlier. All the variables are statistically significant as their alphas are less than 10%.

Conclusion

The empirical studies show that the chosen JSE indices did not perform well from February 1998 to November 2008 in relative terms and it was worse after the subprime mortgage financial crisis started looming. It seems that the general norm that *'cash is king'* during financial market crisis seems to work as most financial market indices were down just after the crisis. The mid-caps index performed better than the normal larger indices like the resources and financials, one reason might be that most mid-caps index are made up of *defensive stocks*. As it would be expected, during crisis periods mid-caps tend to show resilience than more stocks because of their defensive nature.

Overall, equities stocks perform poorly during financial crisis due to stock market 'noise' and uncertainty brought by the stock market and this is synonymous with findings of Blalock et al. 2005 and Beltratti and Shiller (1993), and Bond and Webb (1995) on equities' performance during financial. The JSE, just like most stock exchange around the world performed poorly overall.

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"Effective leadership is not about making speeches or being liked; leadership is defined by results not attributes." ~ Peter F. Drucker quotes

GLOBAL RECESSION AHD HUMAN RESOURCE DEVELOPMENT ITS MANAGEMENT CHALLENGES, STRATEGIES AND OUTSOURCING

*S. Subramaniam

Abstract

Global recession is taking a heavy toll of the present human resource available and all the organization is trying the retrench people in order to sustain in the market. It becomes imperative on the part of the management to face the challenge of retaining human resource talent and develop them. The Challenges for Management in this respect is retaining the best human resource talent, creating trust in the mind of human resource, Getting maximum productivity from the human resource available, facing high attrition rate & proper wage and salary administration keeping an eye on cost cutting. In this regard the Management Strategy will be creating an effective training module for human resource development, reward strategy to retain human resource talent, pay hike to eligible employees, cost cutting. It is also very important that some of the activities that organization is doing must be outsourced like recruitment, process, & placement on contract basis.

Key Words: Global recession, effective training module and human resource development

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Introduction

A global recession is a period of global economic slowdown. The International Monetary Fund (IMF) takes many factors into account when defining a global recession, but it states that global economic growth of 3 percent or less is "equivalent to a global recession". By this measure, three periods since 1985 qualify: 1990-1993, 1998 and 2001-2002.

America is the most effected country due to global recession, which comes as a bad news for India. India has most outsourcing deals from the US. Even our exports to US have increased over the years. Export for the month of January declined by nearly 22 per cent. Recessions are the result of reduction in the demand of products in the global market. Recession can also be associated with falling prices known as deflation due to lack of demand of products. Again, it could be the result of inflation or a combination of increasing prices and stagnant economic growth in the west.

Recession in the West, especially the United States, is a very bad news for our country. Our companies in India have most outsourcing

deals from the US. Even our exports to US have increased over the years. There is a decline in the employment market due to the recession in the West. There has been a significant drop in the new hiring which is a cause of great concern for us. Some companies have laid off their employees and there have been cut in promotions, compensation and perks of the employees. Companies in the private sector and government sector are hesitant to take up new projects. And they are working on existing projects only. Projections indicate that up to one crore persons could lose their jobs in the correct fiscal ending March. The one crore figure has been compiled by Federation of Indian Export Organizations (FIEO), which says that it has carried out an intensive survey. The textile, garment and handicraft industry are worse affected. Together, they are going to lose four million jobs by April 2009, according to the FIEO survey. There has also been a decline in the tourist inflow lately. The real estate has also a problem of tight liquidity situations, where the developers are finding it hard to raise finances.

In order to counter the recession period the organizations operating in India must concentrate on three aspects –

1. Human Resource Development.
2. Understanding challenges that the management has to face.
3. Creating strategy to face these challenges.
4. Outsourcing some of the objectives of the organisation

Human Resource Development

Human Resource Development (HRD) is the framework for helping employees develops their personal and organizational skills, knowledge, and abilities. Human Resource Development includes such opportunities as employee training, employee career development, performance management and development, coaching, mentoring, succession planning, key employee identification, tuition assistance, and organization development.

The focus of all aspects of Human Resource Development is on developing the most superior workforce so that the organization and individual employees can accomplish their work goals in service to customers.

Human Resource Development can be formal such as in classroom training, a college course, or an organizational planned change effort. Or, Human Resource Development can be informal as in employee coaching by a manager. Healthy organizations believe in Human Resource Development and cover all of these bases.

Management challenges

• **Retaining the best human resource talent** – In the state of Global recession the main problem than any organization faces is removing non productive human resource and retaining the best talent. In the present situation when the awareness regarding employee's rights and privileges are more, it is very difficult to remove an employee.

On the other hand, retaining the best talent is also very difficult since the competition is fierce. Hence it is a challenge for the HR Department to retain the best human resource talent.

- **Creating trust in the mind of human resource** – During Recession period, a type of fear comes in the mind of employees of losing the job. This fear doesn't allow him to concentrate on work and it suffers. It becomes a challenge for the management to keep the motivation high and to remove the prevalent fear from the mind of the employees.

It also very important that the motivation should not lead to over confidence in such case the employee might leave your organization and join some other organization with a better pay package.

- **Getting maximum productivity from the human resource available** – In recession period since the demand for final product is less, the production schedule is curtailed. In such situation it becomes important on the part of the supervisor to take out maximum from each human resource available as any wastage will result into severe losses to the organization.

- **Facing high attrition rate** - "A reduction in the number of employees through retirement, resignation or death" is known as attrition**.** The rate of shrinkage in size or number is called as attrition rate.

In the best of worlds, employees would love their jobs, like their coworkers, work hard for their employers, get paid well for their work, have ample chances for advancement, and flexible schedules so they could attend to personal or family needs when necessary. And never leave.

But then there's the real world. And in the real world, employees, do leave, either because they want more money, hate the working conditions, hate their coworkers, want a change, or because their spouse gets a dream job in another state. So, what does that entire turnover cost? And what employees are likely to have the highest turnover? Who is likely to stay the longest?

- **Proper Wage and Salary administration keeping an eye on cost cutting** – The financial condition in the recession period can be little problematic. In such situation it becomes a challenge for the management how to cater to the needs of the employee. In India, if any organization fails to give bonus on festivals results into lot of chaos. It becomes a challenge for management to give proper solution in this condition.

Money matters in this condition and generally organization opt for cost cutting strategy. Cost cutting leads to bad employee morale, lack of interest in work, adapting slow work strategy, searching for part time jobs, looking for some other source of income etc.

Management strategy

- **Effective training module for human resource development** – To counter the problems faced by HR Department, it becomes imperative on the part of the organization to introduce training programmes that will enhance the efficiency of the present employees so that they can be more productive.

Training module should be created in such a fashion so that the organization doesn't incur huge financial burden. Financial burden forces organization to implement training programmes but that is not a good strategy if you want to retain human talents.

- **Reward strategy to retain human resource talent –** Another strategy that the management can adapt is reward strategy. In recession period it is very difficult for organization to implement monetary rewards but they can implement non-monetary reward. Non-monetary reward like certificates, giving trophy or medals, providing free education to wards, free medical treatment for a certain period can be a strategy to create trust in the eyes of employee as well increase in efficiency.

Rewards also help to retain people since rewards gives a positive signal to employees from the management side. A positive effort from the management part is a sure shot strategy to retain human resource talent and create loyalty amongst employees.

- **Pay hike to eligible employees** – Employees who show their capability through their efforts related to their work, management should provide salary increment which will enhance their morale as well as loyalty toward the organization.

- **Cost cutting** – While implementing cost cutting the management should make a point that cutting is done only on those things which are not vital for employees. If the facilities of the employees are removed in order to implement cost cutting it brings anger and reduces efficiency level.

Outsourcing

- **Recruitment outsourcing –** In period of recession the management should outsource things which are incurring huge cost. For example if the recruitment is outsourced then the organization has to pay only when selected employees are installed in the organization. It also becomes the responsibility of the placement agency to give good and reliable employees. In recession period the recruitment is less hence this cost can be saved.
- **Process outsourcing –** During production if the production manager thinks that two of the process is incurring huge cost to the organization then it can be done from other agencies. This will help the organization to control cost and get it done on a much lesser price.

- **Appointing people from placement agencies on contract basis –** Nowadays it has become a practice to appoint people on contract basis. These employees are provided by placement agency for a certain period of time and they are not on the roll of the organization hence the liability stays with the placement agency.

Bo Bennett says, "As sure as the spring will follow the winter, prosperity and economic growth will follow recession".

If this expectation is kept in the mind the period of recession can be passed and the organization can come with flying colors. Recession is a period and it is not meant to last longer than our life hence it is to be taken with lot of optimism. If the organization is optimistic then all positives can lead to positive results and the prosperity is within hand distance.

Conclusion

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"It is better to keep your mouth closed and let people think you are a fool than to open it and remove all doubt." ~ Mark Twain

LABOUR MANAGEMENT IN RUBBER HOLDINGS AND ESTATES OF KANYAKUMARI DISTRICT

* Frank Sunil Justus .T

Abstract

The rubber plantation industry in India includes both well organized estates as well as small holdings. Holdings refer to a rubber area contiguous or non-contiguous aggregating 20 hectares or less under a single ownership. Estates refer to land contiguous or non-contiguous aggregating more than 20 hectare planted with rubber under a single ownership. The estate sector tappers are provided with certain benefits made available to them under the Plantation Labour Act. The holding tappers are provided certain benefits by the rubber board based on Rubber Act. In this paper an attempt has been made to find out the satisfaction of holding and estate tappers across four factors namely monetary factors, work conditions, welfare benefits and health and hygiene factors. The reason for absenteeism has also been ranked based on the opinion of tappers.

Key words: Rubber plantation, small holdings and non-contiguous aggregating

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Introduction:

The rubber plantation industry in India includes both well-organized estates and scattered small holdings. The size of rubber plantations in India, as noted above, ranges from small holdings of less than one hectare to big estates of 10,000 hectares. The rubber plantation industry employs about two lakh workers who constitute a major portion of the total work force in the whole plantation industry in the country. India is the fifth largest producer of rubber in the world. Holdings refer to a rubber area contiguous or non-contiguous aggregating 20 hectares or less under a single ownership. Estates refer to land contiguous or non-contiguous aggregating more than 20 hectare planted with rubber under a single ownership.

The Public Relations Report of United Planters Association of South India (1998) reveals that the plantation money gets distributed as 35.3 percent for labour, 5.7 percent for management expenditure, 20.3 percent for upkeep 23 percent for taxes, 0.4 percent as reserve and 5.3 percent as dividends. Sajhau (1987) has stated

that in South India, the plantations form the only segment of the agricultural sector which is run as an organized industry. Krishnakumar (2004) has revealed that rubber has significant socio-economic relevance as about a million growers are involved in the production of this raw material in India, besides providing about 350000 jobs in the plantation sector.

Estate and Holding sector tappers

The estate sector tappers are provided with certain benefits made available to them under the Plantation Labour Act. The PLA has laid regulations on the working time of each category of workers. The employer has to provide protective clothing against rain and cold as per Section 17 of the PLA. Every plantation worker is entitled to earned leave. An adult worker will get one day earned leave for every 20 days work during one year. Any worker who has put in six months or more of service is entitled to housing facilities within the plantation. All workers are entitled to free medical facilities for themselves and their families. As the Plantation Labor Act is applicable to area above 5 hectares under a single ownership, the word holding in this study represents area less than 5 hectares and in the case of estate tappers, well organized estates with area greater than 50 hectares has been chosen.

Though the holding tappers do not get such benefits as available through PLA, they have some benefits allowed to them under Rubber Act, 1947. The Rubber Act 1947 aptly lays down securing better working conditions and the provisions and improvement of amenities and incentives for workers, as one of the basic functions of the Rubber Board. The schemes implemented by the board provide grant of Educational stipend and Merit Award to children of workers undergoing studies in recognized courses, medical benefits and insurance to tappers, assistance for construction of residential houses and latrines etc.

Rubber Board Assistance for the year 2007

As of 2007 the total number of tappers who have utilized the various rubber board schemes are as under

Table-1 Beneficiaries of Rubber Board Scheme in 2007

(Kanyakumari district)

Scheme	No. of tappers benefitted
Educational stipend scheme	1500
Merit scholarship scheme	15
Medical attendance scheme	5
Housing	15
Sanitary subsidy scheme	15

Source : Rubber Board Office, Marthandam

It is seen from table 1.20 that while 1500 tappers have received the educational stipend, only 15 have made use of schemes like housing, sanitary subsidy and merit scholarship and only five are able to make use of the medical attendance scheme.

Need for the Study

Many studies have been carried out with reference to tea labour as also on the economics and marketing aspects of rubber. Haridasan (1992) has made a comparison of the management practices followed in the estates belonging to Indian and non-Indian companies. Not much work has been done with respect to labour management in rubber plantations. There are studies about the implementations of the provisions of the Act but no work has been done to find out how the worker perceives these provisions in terms of satisfaction towards what is being offered to

him. In this study we try to make a comparison of the estate and holding tappers towards their perceived satisfaction of the benefits available to them and try to make out satisfactions pertinent to the same.

Sampling frame work

The cluster sampling method of sampling technique was adopted for this study. Cluster sampling is a sampling technique in which the entire population of interest is divided into groups, or clusters and a random sample of these clusters is selected. In Kanyakumari district of Tamil Nadu around 1500 tappers are working in the large estate sector. Since there was no previous published research work about tappers, a crude method was adopted to fix the sample size that is it was taken as ten percent. To get this ten percent of tappers the following procedure was adopted. Among the four taluks in Kanyakumari district, rubber plantations are

available only in three taluks. Among the three taluks, Vilavankode Taluk was selected randomly. In Vilavanlode taluk there are twelve large estates. Among them eight estates were selected randomly to get a sample of around 180 tappers. The small holdings were selected from the holdings surrounding the large estates and all the 150 tappers working in those small holdings were selected for the study.

Statistical tools used

The primary data were collected by the researcher with the help of the self constructed schedule. The collected data were coded and processed through SPSS package version 17. The researcher applied various statistical tools like Anova and Friedman multiple comparison test.

Objectives of the study

1) To find out the opinion on the reasons for absenteeism among tappers

2) To compare the satisfaction level of tappers based on their estate size

3) To provide suitable suggestions pertinent to the findings

Tappers Opinion on Factors of Absenteeism in Rubber Plantations

The Friedman test is a non-parametric statistical test used to detect differences in treatments across multiple test attempts. The procedure involves ranking each row or block together, then considering the values of ranks by columns. The Friedman test is used to compare observations repeated on the opinion related to absenteeism of tappers.

Table-2 Tappers Opinion on Factors of Absenteeism in Rubber Plantations

Absenteeism factors	Mean	Std deviation	Mean Rank	Friedman Chi square	Friedman multiple comparison
Common illness	2.42	1.76	3.67		1
Religious Festivals	3.16	1.673	4.61		2
Indebtedness	3.38	1.05	5.37		2
Some other job that provides an earning	3.53	1.71	5.36		2
Lack of motivation	3.77	1.45	5.78		3
Frequent transportation problems like breakdowns, punctures etc	4.02	1.24	6.04		4
Monotony	4.09	1.64	6.40	557.706	4
Drinking and gambling habits	4.37	1.08	6.80		5
Strained relationships at home	4.49	0.98	7.03		5
Poor interpersonal relationship with workers and supervisors	4.58	0.90	7.19		6
Loss of personal commitment	4.77	0.80	7.74		6

Source: Primary data computed

From the table 2 the mean values of common illness, religious festivals, indebtedness and other job are major reasons for absenteeism as per the opinion of the tappers. Further Friedman test is applied to find out the most influencing factors of absenteeism.

As per Friedman multiple comparison test the common illness is the most predominant reason for absenteeism. It falls in the first category. Religious festivals, indebtedness and other job that is a second job after the completion of the daily tapping sessions are the second most influencing reason for absenteeism among tappers. Lack of motivation alone falls in the category of third most influencing reason. Transportation problem and monotony are the fourth most influencing reason for absenteeism. Strained relationships at home and drinking and gambling habits are the next influencing reason. Loss of personal commitment and poor interpersonal relationship with superiors and peers are the least influencing reason for absenteeism in the opinion of tappers.

Hence as per Friedman multiple comparison test we find common illness as the most predominant reason for absenteeism. In a previous study Rege (1946) states that the causes of absenteeism are generally sickness and fatigue and the consequent desire for rest. Sheer idleness on the part of the workers is also not a negligible factor. The workers give out sickness and want of rest as the main cause of absenteeism. The workers come from distant villages and life in the plantations involves them change in climate diet etc, which acts as an unhealthy influence.

Satisfaction of Estate and Holding Tappers on Monitory Benefits Based on Age

There are a total of four statements comprising the monetary factors. They include period of salary disbursement, salary amount, bonus and method adopted for establishing compensation. A mean score of four indicates the highest satisfaction whereas a score of twenty indicates total dissatisfaction.

Table-3 Satisfaction of Estate and Holding Tappers on Monitory Benefits Based on Age

Age	Estate		Holding		Source	ANOVA			
	Mean	SD	Mean	SD		df	Mean Square	F	Sig.
<30	8.4444	2.8333	13.6250	2.6802	Group	1	950.885	28.482	.009 **
31-40	7.8333	3.0000	13.5965	2.5485	Age	3	15.026	.356	.791 (NS)
41-50	9.9367	3.1224	13.0000	2.5912	Group*Age	3	42.226	4.518	.004 **
>51	9.1500	3.4387	12.0588	3.7168					

Source: Primary data computed

** Significant at 5% level   NS - Not significant

The table 3 reflects the perceived satisfaction of tappers towards monitory benefits provided by estates and holdings based on their age group. The mean value ranges between 7.8333 and 13.6250. The least level of satisfaction is perceived by small holding tappers under 30 years of age, the mean value being 13.6250. The highest level of satisfaction is opined by estate tappers between the ages of 31 to 40 with the mean value of 7.8333.

Among estate tappers the 31to 40 age group tappers have opined monitory benefit satisfaction at the highest level and the least level of satisfaction about monitory benefits is perceived by estate tappers of the 41 to 50 age groups.

Among the small holding tappers the perceived satisfaction to monitory benefit of the less than 30 age group is the lowest with a mean value of 13.6250 whereas the satisfaction perceived by the above 51 age group is the highest with the mean value of 12.0588.

ANOVA test is also carried out to identify whether there is any significant difference in the perception level about monitory benefits available to tappers in the estates. It is observed from the result that there is no significant difference in the perception level based on age of tapper F value is 0.356 and P value is 0.791. However there is significant difference in the perceived satisfaction about monitory benefits based on land area (Pattern of Ownership), the F value being 28.482 and P value 0.009. There is interaction effect of land area and age of tappers with regard to monitory benefits. Tappers in the estates perceive a higher satisfaction towards monitory benefits compared to small holding tappers. So, there is combined effect of land area and age of tappers on the perceived satisfaction about monitory benefits.

International Labour Organization report (1965) has indicated that plantation managers put young workers on tapping job on the grounds that their fingers are suppler and that they learn quicker and do the job better than old persons.

The Royal Commission (1929) observes that if the attractions of tea garden life in Assam are increased, the result should be that recruits will offer themselves at the depot without the intervention of any intermediary.

Small holding tappers of age less than 30 are the most dissatisfied based on monetary factors. In an earlier study on small holdings, Pothen et al. (2000), opines that in small holdings workers do not prefer to be tappers in rubber plantations as the wage rates are lower compared to that of casual labour elsewhere, at a tapping task of 300 trees per tapper. The opportunity cost of a tapper is higher since he has to start work during the early hours of the day and is engaged up to sunset although the actual working hours may be less than eight

hours with higher extent of leisure in between. Further there is the monotony of working alone and loss of working days during the rainy and summer seasons.

It is found that cent percent of small holdings have working days less than 251 days of which 30 percent has less than 201 days and 80 percent has less than 231 days. This means that they do not get paid for more than 120 days in a year which is a period of three months.

Satisfaction of Estate and Holding Tappers on Work Conditions Based on the Nativity of Tappers

There are a total of seven statements comprising the work conditions. They include drinking water provisions, working hours, responsibilities, work pattern, work tools provision, local transport facilities and grievance procedure. A mean score of seven indicates the highest satisfaction whereas a score of thirty five indicates total dissatisfaction.

"Destiny is not a matter of chance, but of choice. Not something to wish for, but to attain"

~ William Jennings Bryan

Table-4 Satisfaction of Estate and Holding Tappers on Work Conditions Based on the Nativity of Tappers

Nativity of tapper	Estate		Holding		Source	ANOVA			
	Mean	SD	Mean	SD		df	Mean Square	F	Sig.
Immigrant	11.5882	3.5542	18.9000	3.1780	Group	1	753.696	12.351	.176 (NS)
Actual population	13.8204	7.6089	17.8929	6.9050	Nativity of tapper	1	8.727	.143	.770 (NS)
					Group*Nativity of tapper	1	61.021	1.218	.271 (NS)

Source: Primary data computed   NS- Not significant

The table 4 reflects the opinion of tappers towards work conditions existing in the estates and holdings based on their nativities. The mean value ranges between 11.5882 and 18.9000. The highest level of satisfaction is perceived by immigrant tappers of large estates. The lowest level of satisfaction is opined by immigrant tappers of small holding with the mean value of 18.9000.

The immigrant tappers of estate have opined work condition at the highest level with the mean value 11.5882 and the least level of satisfaction about work condition is opined by native tappers with a mean value of 13.8204

The native holding tappers have opined a greatest satisfaction to work condition compared to immigrant small holding tappers who have opined a lowers satisfaction.

ANOVA test is also carried out to identify whether there is any significant difference in the perception level about work condition in the estates. It is observed from the result that there is no significant difference in the perception level based on nativity of tappers. (F value is .143 and P value is 0.770). Similarly there is no significant difference in the perceived satisfaction about work condition based on land area. There is no interaction effect of land area and nativity of tappers with regard to work condition.

The immigrants having relocated, their chances of looking at other jobs are quiet restricted. They seem to concentrate on the single work at hand while the actual population multi task. The immigrant tappers in the estate sector are provided with plantation quarters, stay as one big plantation community and are also provided benefits as per plantation Act.

Bhadra (1992) has indicated that plantation all over the world is survived on imported labourers who are comparatively cheaper than the local labourers. The immigrant labourers become an inseparable part of the plantation system. Plantation is by and large associated with a resident labour force which is of alien origin.

Justus et al. (2009) have stated that one is in a great place to work if one trusts the people he works for, takes pride in the work he does and enjoy the company of the people he works with.

Satisfaction of Estate and Holding Tappers on Health and Hygiene Factors Based on Gender

There are a total of three statements comprising the health and hygiene factors. They include water facility in housing area, sanitary facilities in plantations and street light and sanitation in housing area. A mean score of three indicates the highest satisfaction whereas a score of fifteen indicates total dissatisfaction.

Table-5 Satisfaction of Estate and Holding Tappers on Health and Hygiene Factors Based on Gender

Gender	Estate		Holding		Source	ANOVA			
	Mean	SD	Mean	SD		df	Mean square	F	Sig.
Male	6.7931	3.3388	9.1007	2.5594	Group	1	44.142	5.002	.026**
					Gender	1	.317	.036	0.850(NS)
Female	5.3000	1.2516	10.0000	2.5518	Group * Gender	1	5.145	0.583	0.446 (NS)

Source: Primary data computed

** Significant at 5 % level   NS- Not significant

The table 5 reflects the opinion of tappers towards health and hygiene factors available at large estates and small holdings based on their gender. The mean value ranges between 5.3000 and 10.0000. The least level of satisfaction is perceived by female tappers of small holdings the mean value being 10.0000. The maximum level of satisfaction is opined by women tappers of large estates with the mean value of 5.3000.

Among estate tappers, female tappers have opined a higher satisfaction towards health and hygiene factors with the mean value 5.3000 and male tappers have lesser perceived

satisfaction about factors of health and hygiene.

Again among holding tappers, the female tappers have opined a lower satisfaction to health and hygiene factors compared to male tappers, the mean value being 10.0000.

ANOVA test is also carried out to identify whether there is any significant difference in the perception level about health and hygiene among rubber tappers. It is observed from the result that there is no significant difference in the perception level based on gender, the F value being .036 and P value 0.850. But there is significant difference in the perception about health and hygiene based on land area, the F value being 5.002 and P value is 0.026. There is no interaction effect of land area and gender of tappers with regard to health and hygiene factors.

Female tappers are more satisfied than male tappers in the case of health and hygiene factors.

Bhowmik (1996) has indicated that water sources have a close bearing on women's lives. Women are the major users of water, in the sense that they take the major responsibility for those tasks that involve the use of water. Where water sources are available within easy reach of dwellings, the burden on women's lives are eased and not only do they have more free time but also better health.

Satisfaction of Estate and Holding Tappers on Welfare Factors Based on Religion

There are a total of four statements that constitutes the frame work for the opinion of the tappers with regard to welfare factors. They include the availability of education facilities, education stipend scheme, education scholarship scheme and housing subsidy scheme. A mean score of four indicates the highest satisfaction whereas a score of twenty indicates total dissatisfaction**.**

Table-6 Satisfaction of Estate and Holding Tappers on Welfare Factors Based on Religion

Religion	Estate		Holding		Source	ANOVA			
	Mean	SD	Mean	SD		df	Mean square	F	Sig.
Hindu	8.3468	2.5280	10.1111	2.9194	Group	1	110.802	15.703	.000*
Christian & Others	8.1333	2.6583	8.7564	2.5996	Religion	1	47.804	6.775	..010**
					Group *Religion	1	25.320	3.558	.059 (ns)

Source: Primary data computed   NS- Not significant

* Significant at 1 % level   ** Significant at 5% level

The table 6 reflects the perceived satisfaction of tappers towards education facilities existing in the large estates and small holdings based on their religion. The mean value ranges between 8.1333 and 10.1111. The least level of satisfaction towards existing welfare provisions is perceived by Hindu small holding tappers the mean value being 10.1111. The highest level of satisfaction is opined by Non Hindu large estate tappers, with the mean value of 8.1333.

Among large estate tappers the Christian & other religion tappers have opined satisfaction towards welfare facilities at the highest level and the least level of satisfaction towards education is perceived by estate based Hindu tappers the mean value being 8.3468.

Among the small holding tappers, the perceived satisfaction about education facilities of the Hindu tappers is the lowest with a mean value of 10.1111 whereas the satisfaction perceived by the Christian and other religion tappers is at a highest level with a mean value of 8.7564.

ANOVA test is also carried out to identify whether there is any significant difference in the perceived satisfaction about the education facilities available to them. It is observed from the result that there is significant difference in the perception level based on religion of tapper the F value is 6.775 and P value is 0.01. There is also significant difference in the perceived satisfaction about education facilities based on land area that is pattern of ownership, the F value being 15.703 and P value 0.000. There is no interaction effect of land area and religion of tappers with regard to their opinion on educational facilities available to them.

Kaniampady (2003) stated that religion is considered an important variable influencing

the status of women working in the tea plantation.

Among the tappers of Kanyakumari district there is no difference on the attitude towards children's education between a boy and a girl and the emphasis is on providing education to them to the best capability of the tappers. From the study it is found that 29 percent of Hindu tappers send their children to private schools while 31 percent of Christian and other religion tappers send their children to private schools. Only 2.2 percent of Christian and other religion tappers send their children to estate school while 10.2 percent of Hindu tappers send their children to Schools run by estate management. While 18.2 percent of small holding tappers send their children to private schools 38.6 percent of estate tappers send their children to private schools.

Satisfaction of Estate and Holding Tappers on Welfare factors based on the Number of Children

There are a total of four statements that constitutes the frame work for the opinion of the tappers with regard to welfare factors. They include the availability of education facilities, education stipend scheme, education scholarship scheme and housing subsidy scheme. A mean score of four indicates the highest satisfaction whereas a score of twenty indicates total dissatisfaction**.**

Table-7 Satisfaction of Estate and Holding Tappers on Welfare factors based on the Number of Children

Children	Estate		Holding		Source	ANOVA			
	Mean	SD	Mean	SD		df	Mean square	F	Sig.
Up to 2	8.3250	2.5077	9.6757	2.7836	Group	1	26.765	3.738	.054 (NS)
					Children	1	24.310	3.395	.066 (NS)
3 & above	8.3390	2.7456	8.3571	2.7917	Group *children	1	25.364	3.542	.061 (NS)

Source: Primary data computed   NS- Not significant

The table 7 reflects the perceived satisfaction of tappers towards education facilities existing in the estates and holdings based on number of children. The mean value ranges between 8.3250 and 9.6757. The least level of satisfaction towards existing welfare factors is perceived by small holding tappers with up to two children the mean value is 9.6751. The highest level of satisfaction is opined by large estate tappers with up to two children, the mean value being 8.3250

Among estate tappers those with up to two children have opined satisfaction towards educational facilities at a higher level and a lesser level of satisfaction towards education is perceived by estate based tappers with above two children the mean value being 8.3390.

Among the holding tappers, the perceived satisfaction about education facilities of tappers with up to two children is lower with a mean value of 9.6757 whereas the satisfaction perceived by tappers with more than two children is at a higher level with a mean value of 8.3571.

ANOVA test is carried out to identify whether there is any significant difference in the perceived satisfaction about the education facilities available to them. It is observed from the result that there is no significant difference

in the perception level based on the number of children of tappers, the F value being 3.395 and P value 0.066. There is no significant difference in the perceived satisfaction about education facilities based on land area (Pattern of Ownership), the F value being 3.738 and P value 0.054. There is no interaction effect of land area and the number of children of tappers with regard to their opinion on educational facilities available to them.

The Royal Commission (1929) recommended that education of the industrial worker should receive special attention and that employers should try to develop the education of their workers children.

Bhowmik (2002) has indicated that, lack of proper education of the children of plantation workers is bound to affect their occupational mobility in the future.

The awareness about education is high with the tappers and all of them provide good education for their children. Estate tappers with two children are more satisfied as they can afford more for the education of their children. As estate tappers have allegiance to union they submit the forms in groups and are able to get the education stipend schemes provided by the rubber board easily as compared to small holding tappers. Moreover they are provided a

school fee advance by the estate management. It is also seen in this study that while 37 % of estate tappers send their children to private schools only 16.7 % of holding tappers send their children to private schools. The small holding tappers do not have terminal benefits and hence may look at the future earning potential of the present day education of children and hence are more satisfied in the case of more than two children.

Findings of the Study

While ranking the reasons of absenteeism based on the opinion of tappers common illness is the most predominant reason for absenteeism. Religious festivals, Indebtedness and other job are the second most influencing reason for absenteeism among tappers. Lack of motivation alone falls in the category of third most influencing reason. Transportation problem and monotony are the next most influencing reasons for absenteeism. Strained relationship at home and drinking or gambling habits are the next influencing reason. Loss of personal commitment and poor inter personal relationship with superiors or peers are least influencing reason for absenteeism in the opinion off tappers.

Among large estate tappers the 31 to 40 age group tappers have opined monitory benefit

satisfaction at the highest level and the least level of satisfaction about monitory benefits is perceived by estate tappers of the 41 to 50 age groups. Among the small holding tappers the perceived satisfaction to monitory benefit of the less than 30 age group is the lowest.

The immigrant tappers of large estates have opined satisfaction towards work condition at the highest level. The native small holding tappers have opined a greatest satisfaction to work condition compared to immigrant small holding tappers.

Among the tappers of large estate, female tappers have opined a higher satisfaction towards health and hygiene and male tappers have lesser perceived satisfaction about health and hygiene factors.

Estate tappers with two children are more satisfied as they can afford more for the education of their children.

Suggestions

Monetary factors

Wage

➢ The wages of estate tappers are being revised once in three years. Rubber being an item whose prices fluctuate the period of revision can be brought to once a year which will make the wage more realistic to rubber prices.

➢ The estates should pay the bonus at the stipulated time. It is often the delayed payment of bonus rather than the quantum that causes dissatisfaction among tappers.

➢ The small holding owners pay the tappers on a per tree basis. At least in times of high rubber prices there should be a production linked bonus. This will motivate the tapper to get the maximum yield.

➢ Indebtedness has come out as a major cause of absenteeism in small holdings. It is found that cent percent of small holdings have working days less than 251 days of which thirty percent has less than 201 days and 80 percent has less than 231 days. This means they do not get paid for more than 120 days in a year which totals to more than three months. This indicates the cause of indebtedness and the relevance of other jobs. The holding tappers should be trained in plantation related activities like bee keeping which can provide them an income. The holdings should also provide them head lights which can be used to begin the work as early as 4 a.m. in the morning enabling them to have a suitable other job also. It has also been observed that rain guard protected plantations can have tapping days as high as 320.

Health and Hygiene factors

➢ Table 1 clearly indicates that schemes like medical attendance scheme are not utilized properly because of operational inconvenience. In a district where disease like chikungunya is prevalent, the fact that only five tappers have availed the medical scheme proves that though the scheme is available, it has not reached the tappers in a proper way. The schemes should be made tapper friendly. The tapper needs to be authorized either by the owner of the holding, the rubber producer society president or the rubber board extension officer to get the benefit of this scheme which is in no way practical.. The rubber board themselves can maintain a list of registered tappers. Based on the details of hospital visit the tappers should be able to make their medical claim.

➢ The estate managements should come forward to get in touch with local voluntary organizations to conduct free health camps in those areas where the tappers live as a community. This kind of preventive health care is a necessity for workers living in isolated locations.

Working Conditions
Tapping Task

➢ The increase in tapping task can be achieved by introducing more collection

points and assisted collection. Under the system of assisted collection the responsibility of carrying latex to the weighing shed is entrusted to another person or a vehicle is provided by the estate for the purpose. As a result the tapper gets more time to tap a few more trees. Tapping is a skilled job whereas carrying the latex is an unskilled job. By increasing the collection points within the estate, the distance to be traveled by the tapper for weighing the latex is reduced and therefore he can tap some more trees in that time .

Welfare facilities

1. Education

➢ The managements and rubber board can come together and think of starting vocational schools and also ITI institutes, as getting jobs for the children of plantation workers remain a big question mark in the minds of tappers. This will make the workers stress free and enable them to concentrate on their work.

2. Festival Holidays

➢ Certain holidays which the tappers consider as important (like the Tamil festival Pongal in the particular year of the study) do not come under the Festival Holiday list. Hence a one or two day restricted holiday can be considered which the tapper can utilize as a holiday for a festival of their choice. This will reduce tapper absenteeism related to festivals.

3. Motivation

➢ The estate management can select the best tapping block every month and provide the tapper responsible for that block a cash incentive. This not only motivates the tapper but instills a sense of responsibility among tappers and in the long improves the quality of tree as well as tapping. This is the other way round of the present system where in certain estates the managers go round the estates daily and in case of erratic tapping the tappers get punished. The rubber board can also conduct and provide cash incentives to holding tappers associated with best maintained blocks selected by rubber board officials at least among those plantations where planting subsidy has been given. This will motivate the tappers and may also encourage youngsters to look upon tapping as a profession. This will also give an idea tothe board how the plantations for which subsidy has been provided, are maintained.

4. Women in plantation

➢ Family labour is at the moment available in rubber estates where the tappers are exclusively Sri Lankan repatriates. If bus provisions are provided and if assisted collection is also introduced more women can

be attracted to the job. This will solve the problem of tapper shortage which might become a reality as the tapper age is slanting upwards. This will also improve the family income of tappers.

Conclusion

The rubber tree contributes to absorbing Carbon dioxide from the atmosphere. The average rate of photosynthetic carbon fixation is about 1150 $gm/m^2/yr$. An area of 10 million hectares under rubber, worldwide would fix about 115 million tonnes of carbon annually which is substantial. This much amount of plantation produces approximately 7 million tonnes of natural rubber. It can be well understood that the amount of carbon removed from atmosphere by natural rubber plants to make 7 million tonnes of natural rubber to the amount of carbon emitted into the atmosphere by synthetic rubber factories to produce an equivalent quantity of synthetic rubber. Hence natural rubber contributes so much to the environment compared to synthetic rubber. Justus (Sept. 2007) states that the labour force is a major plantation asset and if they are to be kept at an optimum productive level the management certainly needs to take interest in their life at home, life in the community and their relationship at the place of work. The soul of the rubber plantation is both the tree and the tapper and both should be well guarded if India is to come out as a big player in the natural rubber arena.

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"When all think alike, then no one is thinking." ~ Walter Lippman

INNOVATIVE HRM STRATEGIES-A DEVICE TO OPTIMIZE BOTTOM-LINE

* *Sarwath Khizrana*

Abstract:

This paper ponders upon some strategies that hurt innovation. In addition, based on some of the cases of past recession-hit companies, it also identifies some practical and widely applicable strategies of HRM function that companies can tag on to overcome these barriers and stop innovation halting. Many of the companies today dangle their innovation efforts until the worst of the hurricane blows over. And by the time the economy recovers, they may loose the precious opportunities to competitors .They will face daunting challenges and turmoil's if they don't find creative ways to keep their innovation process initiatives moving during the darkest days of the downturn.

Key words: Innovation, Team work, and performance culture

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Introduction:

"Reinvent yourself." it's a card that sometimes gets played during tough economic times.

In the current economic climate, particularly investing long term in ideas that might drop, or not produce profitable return immediately is devastating. Remaining fanatical to innovation despite short-range market conditions is undoubtedly not always effortless, but has been a proven success feature behind many of leading businesses today. There is significant business value to gain using innovation as a powerful tool for bottom line optimization. There are often many cultural and organizational issues that can cause unseen barriers and prevent the necessary changes in innovation focus.

Vaitheeswaran (2007) provides an excellent example of how new processes led to wealth creation in his description of the birth of the oil industry. While the idea of drilling for minerals was nothing new, in fact, the ancient Chinese

are known to have used drilling to extract salt deposits, nobody thought of drilling for oil until a certain Colonel Drake drilled a hole in the ground in Pennsylvania in 1859. He struck "black gold" creating a new industry and ultimately, inventing the world as we know it today. The planet would be facing environmental problems if Drake had just left the oil where it was, so that troubles actually served as a trigger for new and exciting innovations in the way we power our industries. The same is during the times of recession. Innovation and creativity are generally considered to be critical competencies for improving organizational staying power (e.g. **Amabile, 1988; Kanter, 1983; Tushman and O'Reilly, 1997; Utterback, 1994; Woodman et al., 1993).**Innovation is the driver of performance, growth and stock market valuation.

Companies must understand that innovation is the core drivers of their value propositions. In order to protect and expand revenue in a tough economic climate, it is essential to deliver a strong and well-differentiated value proposition.

As the economy is slowing down. The sprawl is enchanting a charge on businesses.

According to a recent national survey, 83 percent of CEOs believe, the economy is either going to stay the same or decline over the next 12 months. (**Lee Froschheiser, 2008**).

Here the question arises, in these challenging and turbulent times how can today's business leaders navigate the rough tides? How to maintain the productivity by bringing innovative HR practices?

From the last recession, it is realized that Productivity comes from innovation. Innovation comes from investment and change.In the past, during hard economic times; companies have focused on implementing recession-proof strategies. Winners always emerge out of recessions and they usually beat their competitors on the basis of something new.

Apple worked on iTunes, iPod and its retail stores during the last recession and came out swinging (**Bruce Nussbaum, 2008**)

The process of innovation in an organization is a mostly positive process. HRM takes into account consistency in flow of ideas, creativity, Rousing leadership, authorised workers, and creativity. Shooting down new ideas only hurts the process, because it blocks the way to getting to the right idea. In the last recession

about 800 companies went out of business that had no business model and relevant HRM innovative strategies **(Tom Foremski.2009)**

The companies are in a whirl ,sweating to save the business .every day a new idea ,a new strategy come into place to save the business out of the meetings and discussions that are taking place in thousand board room since the recession wave have spread.. There are certain strategies that may look immediately obliging but will not reap benefits in a long run .they are the strategies that hurt the business innovation.

HR Strategies that hurt innovation

Sacking the Talent

Companies are disregarding the magnitude of talent It is the single most important variable in innovation Companies consider that talent is the quick way of cutting cost .So there is a roar everywhere of cutting down the most valuable assets of the Organizations.

This strategy of sacking the talent hurts the innovation which was also experienced by a past recession hit paper manufacturing company in 1990's.A paper products manufacturer had invested a large capital sum to build a new state-of-the-art, automated warehouse. The prime reason for this

innovative large capital investment was to lower costs by reducing the number of warehouse employees the reality proved to be very different. Profits for the company actually fell this led to a noticeable reduction in quality of customer order fulfillment, resulting in a loss of market share. Clearly, the paper company's original investment strategy backfired. This case proves that employees are the greatest asset to any organization and are the key to innovation.

Increasing pressure on talent by Slashing Technology Costs.

Companies are already curbing investments in technology to save money and putting more pressure on people to achieve goals. This can hamper the overall productivity.

Companies chopped its first-quarter earnings as the slowdown in office equipment spending badly hurt revenue and thwarted its cost-cutting efforts. Ultimately the talent becomes unused.

For example In case of **Xerox**, the world's top supplier of digital printer and document management services, fell 20 percent after its outlook made clear the toll that falling sales of equipment and printer-based supplies is taking on the company.

The companies who sustains are the ones who made investments in technology and help people to innovate continuously.

In the past recession, Apple survived because it continued to invest. Steve Jobs hadn't reduced research and development spending when others in the industry had experienced a slow down.

Sacking jobs by Stopping producing the new product..

Saving money often means cutting back on new products and services during an economic downturn. This hurts companies when growth returns and they have fewer offerings in the marketplace to attract consumers. The innovation that a human capital brings in no longer can be a source for company's growth and survival.

The company that constantly motivated and retains talent for innovation in tough times with new product development survives.

For Example, Unilever took advantage of this when it launched a value washing

Detergent, surf during a recession. The result was a 13% market share .Uniliver considers, the most rewarding strategy is to innovate. It is more important to innovate through a

recession, **Apple** is one of the only two companies making money in the PC., Apple also has a history of downsizing and restructuring, but it has also chosen to innovate through recession. Through innovation, Apple has not only kept its pipeline robust, but – more importantly – it has remained in front of its customers. Apple always has a story to tell. And it tells that story through new products. New products are not only required to remain relevant, they are signs of hope to Employees

Replacing the growth oriented leader by cost cutter:

Sudden declines in revenues and profits often lead boards to search for leaders and managers with experience in pinching pennies. But Penny-pinching CEOs don't have the skills to grow, when growth returns.

Taking a broad perspective on recession there are a variety of strategies that contribute to the bottom line and help companies navigate through recessions. But then it is the role of the growth oriented high performing CEO's and Managers to approach strategy from a broader perspective, using alternatives beyond cost-cutting and lay-offs. They should focus resources on the longer-term mission and

success of the company. As recessions do not last forever, it will be prudent to set up innovative playbooks in advance for navigating back to growth.

Stop rewarding the employees.

To save money and cut costs, managers change the performance metrics .they stop rewarding employees .In fact the employees should be rewarded more for riskier new projects toward sustaining safer older goals through innovation in recession. Once the Risk-averse behavior begins, it is hard to change.

Cutting back on outside consultancies

This is seen as a quick way to save money. But it will hurt the company's competitive position .Consultants can bring in outside innovation. They know what companies across a broad range of industries around the world are doing to promote change.

Hack training Cost

The easiest way companies consider to save money in short run is cutting on training and executive development expenditures. But it creates huge gaps in company capabilities and bench depth. Past recession hit companies faced such challenges when by not investing on people during bad times and then find that they don't have the talent to staff growth projects when things turn around.

Cost-cuts of this nature usually have unanticipated side-effects. They result in a loss of morale in staff that can see the potential margin. Implications but can do nothing about it. They act to dampen innovation and initiative.

All such strategies may have devastating impact .Companies along with cutting on the most valuable slices, can plan for new innovative ideas for future and ways of retaining it.

Strategies that supports innovation –The Experiences of past recession hit companies.

Fortunately, many leading companies are still very focused on innovation as a driver of enriching company's value. This was highlighted by the recent Aberdeen survey titled "Product Innovation Agenda 2010: Profiting from Innovation Today and Tomorrow," and is a big reason Invention Machine's clients invest in products to help drive their sustainable innovation initiatives

Even in the past recession, the companies that focused on HR strategies for innovation drivers survived the down turn successful.

Case of Colgate palmolive

Colgate-Palmolive achieved consistent increases to their global revenues and profits in prior downturns. This was done through relevant and powerful HR management innovative practices of innovative product launches and increased advertising spending to support their product sales, complemented by improved acquisitions, divestitures, and efficiency.

Colgate-Palmolive's unwavering commitment to investing in product development and growing both revenue and profitability enabled it to outperform peers with similar products in both the recessions. In 1991, Colgate acquired the Murphy-Phoenix company, bringing a unique product to its portfolio that increase revenues and had significant international potential **(PR Newswire, 1991)**. In 1992, it launched the Stand-Up tube and positioned it as a cleaner, environmentally friendly alternative to tubes

and pumps **(Deveny, 1992).** In the first quarter of 2000, Colgate launched Total Fresh Stripe, which strengthened its leading position in toothpaste. The introduction of Speed Stick clear antiperspirant and Palmolive Spring Sensations dishwashing liquid also increased market share during 2000While introducing new product variations, Colgate also improved its margins by consolidating manufacturing and distribution, investing heavily to automate old plants and getting rid of unrelated businesses **(Morgenson, 1991).**

A second example of a successful business launching new products during a recession is **Gillette's** introduction in 1990 of its Gillette Sensor brand of shaving products. Since the initial marketing of Gillette Sensor products, more than 8 billion Sensor razor blade cartridges and 400 million Sensor razors have been sold. By 1997, a record 49 percent of Gillette's sales came from new products introduced in the previous five years. In the same year, Gillette's annual R&D spending had reached $212 million.

Taking a broad perspective on recession **as these brief examples illustrate, there are a variety of innovative strategies that**

contribute to the bottom line and help companies navigate through recessions.

As the economic recession expands, many companies are rethinking their strategies to ensure that they will remain strong and vital. Shortsighted attempts to improve bottom line results at the expense of innovation and product development by proper alignment of HRM function will deliver more and deeper harm to the organization that greatly outweighs the short term benefits perceived. Pondering on it some companies have come up with new slogans like **Toyota:** Train idle workers to improve quality and productivity, rather than laying them off., **Google:** Freeze hiring and curtail expansion to ride out the storm, **GM:** Acquire your competitor to solidify your position as number one.

Engaging the entire organization and challenging people internally to come up with ways in which the company can continue to innovate. And then, appropriately rewarding the people for their actions. This will also help foster the all important positive attitude so that the companies don't lose essential people during a downturn.

Protect know-how

It is very important role for a HR function of a company to protect the know-how in the organization. As the recession poses challenges of cutting the employees ,the manager has to expect some level of fluctuations and build enough strategies for smooth transition .New innovative strategies like Process flow charts, rotation of employees and shared responsibility can keep up the company in safeguarding certain know how's.

Necessity is the mother of invention

Innovation thrives when it has no other choice. In this way, innovation is the most basic and primal of human experiences.During tight times, the employees could spend on coming up with ways to innovate by focusing on what ifs.

For example: Birth of **Nescafe**, world's first instant coffee which was also a "**Depression era baby"**. In 1930's when the Brazilian Coffee Institute was sitting on a huge surplus of coffee beans it implemented an innovative Thinking, without scaking employees or cutting costs. That a new product could help increase consumption, a coffee that was soluble in hot water is developed thereafter, and it

became a staple beverage of consumers through the world most.

This kind of innovation could be done efficiently by HRM function aligning and cultivating good relationships with stakeholders, to be more innovative in terms of the products and services By listening to their needs and ideas, it helps to strengthen the key relationships that will help to pull people through a difficult time when they could go elsewhere because of cost pressures. In tough times there's often an impulse in managers to send everyone out searching under rocks for new customers or verticals. This runs counter to reality in a recession, it costs exponentially more to lure a new customer than keep an existing one.

Maintain high performance culture

The companies with the high performance culture have the advantage in the recession. As the employees in the high performance culture organization are used to compete among them, they can compete with the recession and it is much easier to make them motivated for such a fight. They will have challenging goals rather than clearly defined goals.

Motivate and reinforce Team work

In the recessionary environment, employees should discuss and share what everyone is worrying about. They should unify to overcome certain obstacles Company culture needs to be fearless that it can weather moderate recessions.

For Example. In 1993 **Volkswagen,** under extreme economic pressure, was made rapid progress on raising productivity and quality by better teamwork in manufacturing: but all its other functions remained resolutely immobile.(Robert Heller on Sat, 2006)

Diversify and ramp-up research

Instead of investing more resources and longer development timelines in a limited number of "best" ideas brainstorming how to get more of the ideas to market faster is beneficial Revisit the good ideas files, and look from the perspective of the leaner times to come. Diversifying portfolio of products or services is a tried and true method for managing risk.

Conclusion:

Looking at various experiences of various companies that survived past recession's

Innovative HR practices proves to be the real key to success. Recession is considered to be a blessing in disguise for innovation .All HR functions of companies have to make use of the hidden facilitating factors in order to innovate .In the recession times thee war for the talents is less ,Many companies have the recruitment freeze and the employees are less attracted in the change of the employer. The fluctuation is calmer as the employees want to have a bit of stability in their lives. The talent have a chance to get to attractive projects as the cost cutting projects are valued and need the best talents that innovates The company has to focus on its internal costs, structure and the processes. It is a big chance for the HRM Function to implement innovative policies, procedures it is important to keep talent, but it is more important to shed the traits that bog a company down, all that strategies that hurts innovation. Most companies today will struggle just accepting and acting on being the transparent organization they need to be, but those that can do it will find organizational renewal, innovation, growth and profits as solid by products.

Innovation is essentially setting up a culture that encourages out of the box thinking, openness, challenging status quo, spotting opportunities and moving fast to seizing opportunities. Its all for good and bad times .Over all innovative HRM strategies might serve better during a recession and help adjust to changes in bold step and would protect product / service value from being commoditize.

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"Determine that the thing can and shall be done, and then we shall find the way."

~Abraham Lincoln