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VOLATILITY IN INDIAN STOCK MARKET: A STUDY WITH REFERENCE TO SELECTED NSE INDICES

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ABSTRACT

Volatility has been one of the most active and successful areas of research in time series econometrics and economic forecasting in recent decades. Volatility is a statistical measure of the dispersion of returns for a given security or market Index .The main objective of the study is to analyze the volatility of Indian stock market. We have taken five indices from NSE for this study. The sample indices are S&P CNX Nifty, S&P 500, Nifty Midcaps, CNX Midcaps& CNX NIFTY. The Study was conducted from January 2007 to December 2011 and we employed Descriptive Model and E-GARCH Model for making the research more effective and we found that there is high volatility during the study period.

Keywords: E-GARCH Model, Stock Market, Volatility

1. INTRODUCTION

Volatility is a statistical measure of the dispersion of returns for a given security or market index. Volatility is generally measured either by using the standard deviation or variance between returns from that same security or market index. Commonly, the higher the volatility, the riskier is the security. In terms of options pricing, volatility is a variable in option-pricing formula showing the extent to which the return of the underlying asset will fluctuate between now and the options expiration. Volatility, expressed as a percentage coefficient within option-pricing formula, arises from daily trading activities. How volatility is measured will affect the value of the coefficient used.

Volatility is the variability of the asset price changes over a particular period of time and it is very hard to predict it correctly and consistently. In financial markets volatility presents a strange paradox to the market participants, academicians and policy makers – without volatility superior returns are cannot be earned, since a risk free security offers meager returns, on the other hand if it is ‘high’ it will lead to losses for the market participants and represent costs to the overall economy. Therefore there is no gainsaying with the statement that volatility estimation is an essential part in most finance decisions be it asset allocation, derivative pricing or risk management.

Volatility is an important phenomenon in markets in general and security markets in particular. Modeling stock market volatility has been the subject of empirical and theoretical investigation by both academicians and practitioners. As a concept, volatility is simple and intuitive. It measures the variability or dispersion about a central tendency. In other words, it measures how far the current price of an asset deviates from its average past values. The study of volatility becomes more important due to the growing linkages of national markets in currency, commodity and stock with rest of the world markets and existence of common players have given volatility a new property- that of its speedy transmissibility across markets. To many among the general public, the term volatility is simply synonymous with risk: in their view high volatility is to be deplored, because it means that security values are not dependable and the capital markets are not functioning as well as they should.

1.1 Implied Volatility

An essential element determining the level of option prices, volatility is a measure of the rate and magnitude of the change of prices (up or down) of the underlying. The volatility of a stock, σ , is a measure of our uncertainty about the returns provided by the stock. The volatility of a stock

price can be defined as the standard deviation of the return provided by the stock in one year when the return is expressed using continuous compounding. If volatility is high, the premium on the option will be relatively high, and vice versa. Once the measure of statistical volatility (SV) for any underlying has been obtained, we can plug the value into a standard options pricing model and calculate the fair market value of an option. A model's fair market value, however, is often out of line with the actual market value for that same option. This is known as option mispricing. What does this all mean? To answer this question, a closer look at the role IV plays in option pricing is warranted.

1.2 Nature of Stock Market Volatility in Emerging Markets

There are few studies which examined emerging equity market volatility. Bekaert and Harvey (1995) examined the emerging equity market characteristics in relation to developed markets. Emerging markets found to have four distinguishing features: average returns were higher, correlations with developed markets returns were low, returns were more predictable and volatility is higher. They argued that modeling volatility is difficult in emerging markets, especially in segmented markets. In fully integrated markets volatility is

strongly influenced by world factors whereas in segmented markets it is strongly influenced by local factors. More open economies had lower volatility and political risk to a large extent explained the cross sectional variation in volatility. Finally, they found significant decline in volatility in emerging markets following capital market liberalization. Bekaert et al. (1998) argued that emerging markets returns are highly non- normally distributed and exhibit positive skewness in it.

2. REVIEW OF LITERATURE

Magnus et.al., (2006) this study modeled and forecasted volatility (conditional variance) on the Ghana Stock Exchange using a random walk, GARCH(1 1), EGARCH(1, 1), and TGARCH(1, 1) models. They used unique three days a week Databank Stock Index (DSI) to study the dynamics of the Ghana stock market volatility over a 10-year period. They estimated the competing volatility models and their specification and forecast performance .They found that the volatility clustering, leptokurtosis and asymmetry effects associated with stock market returns on more advanced stock markets. They estimate that GARCH models suggest a high degree persistent in the conditional volatility of stock returns on the Ghana Stock Exchange.

Drimbetas et.al., (2006) this study analysed, the effects of the introduction of the futures and options into the FTSE/ASE 20 index on the volatility of the underlying index. They analyses the data (August 1997–April 2005) with the help of an EGARCH model it is shown that the introduction of derivatives has induced a reduction of the conditional volatility of the FTSE/ASE20 index and consequently it has increased its efficiency. They found that these contradictory results have an impact in various markets.

Girard and Omran (2009) this study explored the change in speed of dissemination of order flow information on stock volatility of return in 79 traded companies at the Cairo and Alexandria Stock Exchange (CASE). They examine the interaction of volatility and volume in 79 traded companies in CASE. They found that information size and direction have a negligible effect on conditional volatility and, as a result, the presence of noise trading and speculative bubbles is suspected. They also found that the persistence in volatility is not eliminated when lagged or contemporaneous trading volume is incorporated into a GARCH model. They have shown that, when volume is further broken down into its expected and unexpected components, volatility persistence decreases. Zakaria and

Abdalla (2012) this study examined the model stock return volatility in the Saudi stock market by using daily closing prices on the general market index. He employs different univariate specifications of the generalized autoregressive conditional heteroscedastic (GARCH) model, including both symmetric and asymmetric models. An application of the GARCH (1,1) model provides strong evidence of the persistence of time varying volatility. By allowing the mean equation of the returns series to depend on a function of the conditional variance, his results provide evidence of the existence of a positive risk premium, which supports the positive correlation hypothesis between volatility and the expected stock returns.

3. STATEMENT OF THE PROBLEMS

Most of the stock market investors are not able to pick rights stocks at right time and they met with loss. This study is taken to give guidance to the investors on how to invest in stocks at right time.

4. OBJECTIVES

To study the major factors that affects the Index Volatility.

To estimate the volatility using E-garch model

5. SCOPE OF THE STUDY

This study helps us to understand the Indian stock market and its significant growth and guiding the investors for their investment.

- This study helps to know the reasons for volatility in indices.
- This study can also be used as a referral for other forth coming studies in the similar field.

6. METHODOLOGY

6.1 Sampling Design

- Sampling Area: Indian Stock Market.
- Population: The population of the study is taken from NSE India.
- Sample Companies: 5 Indices Selected from NSE.
- Study Period: The study is being taken from January 2007 to December 2011 (every month Closing price).

Sampling Techniques: The research has adopted the non-probability convenience sampling. A convenience sampling is one in, which the sample units are chosen primarily on the basis of the convenience to the investigator.

6.2 Indices for the study:

- ❖ S&PCNXNIFTY
- ❖ S&P 500
- ❖ NIFTY MID CAP
- ❖ CNXNIFTY
- ❖ CNX MID CAP

6.3 Tools used for the study

- ❖ Descriptive Model
- ❖ E-GARCH Model

6.4 Software Used

E.Views-7

6.5 Descriptive Model

Descriptive statistics are typically distinguished from inferential statistics. With descriptive statistics you are simply describing what is or what the data shows. With inferential statistics, you are trying to reach conclusions that extend beyond the immediate data alone. For instance, we use inferential statistics to try to infer from the sample data what the population might think.

6.5.1 The Exponential Garch (EGARCH) model

The EGARCH or Exponential GARCH model was proposed by Nelson (1991). the log of the conditional variance implies that the leverage effect is exponential, rather than quadratic, and that forecasts of the conditional variance are guaranteed to be nonnegative. The presence of leverage effects can be tested by the hypothesis. The formula for EGARCH as follows.

$$\text{LOG}(\text{GARCH}) = C(1) + C(2) * \text{ABS}(\text{RESID}(-1) / @\text{SQRT}(\text{GARCH}(-1))) + C(3) * \text{RESID}(-1) / @\text{SQRT}(\text{GARCH}(-1)) + C(4) - \text{LOG}(\text{GARCH}(-1))$$

There are two differences between the E-Views specification of the EGARCH model and the original Nelson model. First, Nelson assumes that the follows a Generalized Error Distribution (GED), while E-Views gives you a choice of normal, Student's t-distribution, or GED. Second, Nelson's specification for the log conditional variance is a restricted which differs slightly from the specification.

Estimating this model will yield identical estimates to those reported by EViews except for the intercept term, which will differ in a manner that depends upon the distributional assumption and the order. In the EGARCH model, where the conditional variance is characterized by exponential nature assumes that the external unexpected shocks will exert a stronger influence on the variance than

The results of E-GARCH (1, 1) effect for S&P CNX NIFTY returns are given in the above table. According to the table, The Co-efficient of parameters are C(1) -0.149121, C(2) 0.231936, C(3) -0.087728 and C(4) 0.974965. The sum LOG (GARCH) equation was close to one. This reveals S&P CNX NIFTY experienced high volatility. It's risky to the investors during the study

period from January 2007 to December 2011.

7. DATA ANALYSIS AND INTERPRETATION

Table-1: Descriptive Statistics of Selected Indexes From 2007 to 2011

Index	Mean	Median	Maximum	Minimum	Std.dev	Skewness	kurtosis
S&P CNX NIFTY	0.02947	0.04624	17.7440	-12.2029	1.8956	0.39696	11.6219
S&P 500	0.02282	0.07997	16.2228	-10.9456	1.8121	0.17063	10.9539
NIFTY MID CAP	0.00236	0.0921	18.2717	-14.9598	2.1463	0.24723	12.7834
CNX NIFTY	0.0327	0.1217	14.8266	-12.3074	2.0275	-0.0791	8.31245
CNX MID CAP	0.02814	0.15231	12.1396	-11.8832	1.7103	-0.3535	8.87881

The standard deviation is a measure of risk. Kurtosis is a measure of peakedness and is rarely used. Skewness value is -0.0791 for CNX Nifty and -0.3535 for CNX MID CAP. There is a negative skew to this data set. So the mean is below the median.

E-GARCH

Table-2: S&P CNX NIFTY

$\text{LOG}(\text{GARCH}) = C(1) + C(2) * \text{ABS}(\text{RESID}(-1) / @ \text{SQRT}(\text{GARCH}(-1))) + C(3) * \text{RESID}(-1) / @ \text{SQRT}(\text{GARCH}(-1)) + C(4) * \text{LOG}(\text{GARCH}(-1))$				
Variable	Coefficient	Std. Error	z-Statistic	Prob
Variance Equation				
C(1)	-0.149121	0.014527	-10.26516	0.0000
C(2)	0.231936	0.019513	11.88598	0.0000
C(3)	-0.087728	0.012887	-6.807510	0.0000
C(4)	0.974965	0.004477	217.7731	0.0000

The results of E-GARCH (1, 1) effect for NIFTY MIDCAP preturns are given in the above table . According to the table, The Co-efficient of parameters are C(1)-) - 0.155353, C(2) 0.223929, C(3) -0.065367and C(4) 0.985415. The sum LOG (GARCH) equation was close to one. This reveals CNX NIFTY experienced high volatility. It's risky to the investors during the study period from January 2007 to December 2011.

Table-3: S&P 500

LOG(GARCH) = C(1) + C(2)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(3)*RESID(-1)/@SQRT(GARCH(-1)) + C(4)*LOG(GARCH(-1))				
Variable	Coefficient	Std. Error	z-Statistic	Prob
Variance Equation				
C(1)	-0.152435	0.017632	-8.645131	0.0000
C(2)	0.229065	0.022588	10.14117	0.0000
C(3)	-0.082922	0.012018	-6.899635	0.0000
C(4)	0.977886	0.003708	263.7280	0.0000

The results of E-GARCH (1, 1) effect for S&P 500 returns are given in the above table. According to the table, The Co-efficient of parameters are C(1) - 0.152435, C(2) 0.229065, C(3) -0.082922 and C(4) 0.977886. The sum LOG (GARCH) equation was close to one. This reveals S&P 500 experienced high volatility. It's risky to the investors during the study period from January 2007 to December 2011.

Table-4: NIFTY MID CAP

LOG(GARCH) = C(1) + C(2)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(3)*RESID(-1)/@SQRT(GARCH(-1)) + C(4)*LOG(GARCH(-1))				
Variable	Coefficient	Std. Error	z-Statistic	Prob
Variance Equation				
C(1)	-0.151604	0.016431	-9.226540	0.0000
C(2)	0.226229	0.018146	12.46706	0.0000
C(3)	-0.078447	0.009090	-8.630359	0.0000
C(4)	0.984148	0.003330	295.5268	0.0000

The results of E-GARCH (1, 1) effect for NIFTY MID CAP returns are given in the above table. According to the table, The Co-efficient of parameters are C(1) - 0.151604, C(2) 0.226229, C(3) -0.078447 and C(4) 0.984148. The sum LOG (GARCH) equation was close to one. This reveals NIFTY MID CAP experienced high volatility. It's risky to the investors during the study period from January 2007 to December 2011.

Table -5: CNX NIFTY

LOG(GARCH) = C(1) + C(2)*ABS(RESID(-1)/@SQRT(GARCH(-1))) + C(3)*RESID(-1)/@SQRT(GARCH(-1)) + C(4)*LOG(GARCH(-1))				
Variable	Coefficient	Std. Error	z-Statistic	Prob
Variance Equation				
C(1)	-0.155353	0.020804	-7.467561	0.0000
C(2)	0.223929	0.026136	8.567922	0.0000
C(3)	-0.065367	0.012874	-5.077651	0.0000
C(4)	0.985415	0.003718	265.0264	0.0000

The results of E-GARCH (1, 1) effect for NIFTY MID CAP returns are given in the above table. According to the table, The Co-efficient of parameters are C(1) - 0.151604, C(2) 0.226229, C(3) -0.078447 and C(4) 0.984148. The sum LOG (GARCH) equation was close to one. This reveals NIFTY MID CAP experienced high volatility. It's risky to the investors during the study period from January 2007 to December 2011.

8. FINDINGS & P CNX NIFTY

Descriptive Statics of the S&P CNX NIFTY for the year 2007 to 2011 shows the average returns of mean and median were 0.029476 and 0.046249. The Skewness and Kurtosis of the S&P CNX NIFTY shows the positive level performance like 0.396969 and 11.62197.

The results of E-GARCH (1,1) effect for S&P CNX NIFTY, The Co-efficient of parameters are C(1) - 0.149121, C(2) 0.231936, C(3)- 0.087728 and C(4) 0.974965

Descriptive Statistics of the S&P 500 for the year 2007 to 200 shows the average returns of mean and median were 0.022820 and 0.079972. The

Skewness and Kurtosis of the S&P 500 shows the positive level performance like 0.170634 and 10.95398. The results of E-GARCH (1,1) effect for S&P 500, The Co-efficient of parameters are C(1)-0.152435, C(2) 0.229065, C(3) -0.082922 and C(4) 0.977886.

NIFTY MID CAP

Descriptive Statistics of the NIFTY MID CAP for the year 2007 to 2011 shows the average returns of mean and median were 0.002361 and 0.092137. The Skewness and Kurtosis of the NIFTY MID CAP shows the positive level performance like 0.247238 and 12.78342.

The results of E-GARCH (1,1) effect for NIFTY MID CAP, The Co-efficient of parameters are C(1) - 0.151604, C(2) 0.226229, C(3) - 0.078447 and C(4) 0.984148.

CNX NIFTY

Descriptive Statistics of the CNX NIFTY for the year 2007 to 2011 shows the average returns of mean and median were 0.0332767 and 0.121718. The Skewness (-0.353553) shows the negative performance and Kurtosis (8.312455) shows the positive level performance.

The results of E-GARCH (1,1) effect for CNX NIFTY, The Co-efficient of parameters are C(1)- 0.155353, C(2) 0.223929, C(3)- 0.065367 and C(4) 0.985415.

CNX MID CAP

Descriptive Statistics of the CNX MID CAP for the year 2007 to 2011 shows the average returns of mean and median were 0.028147 and 0.152315. The Skewness (-0.079125) shows the negative performance and Kurtosis (8.878814) shows the positive level performance.

The results of E-GARCH (1,1) effect for CNX MID CAP, The Co-efficient of parameters are C(1)-0.165095, C(2) 0.244459, C(3)-0.067534 and C(4) 0.974541.

9. CONCLUSION

India has been witness to years of up and down cycle in the stock markets. Since 1992, the Indian markets have peaked every fourth year and then dropped 35-45% during the next three years. Some of the major conclusions derived in the study are as under. News related to any political and economical affair has direct effect on stock market. Any unusual news about a particular company will affect the value of their scrip. It is suggested that the investors who want to measure the accurate volatility of the stock market, the GARCH model which is the best one to measure the volatility of stock market. It's in the final hands of the invest in stock market at the right time.

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MARINE PRODUCTS EXPORTS: GDP GROWTH PROSPECT WITH SPECIAL REFERENCE TO COASTAL AQUACULTURE IN INDIA

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ABSTRACT

Indian marine exports have crossed the \$2-billion mark during first nine months of a fiscal. Marine exports touched \$2.028 billion during April-December 2010, registering a growth of 6.60 per cent in quantity, 18.92 per cent in value and 24.70 per cent in dollar realisations. What is noteworthy is the fact that the feat could be achieved in spite of recession in global markets, a strengthening Indian rupee against major currencies and economic tremors in Greece, Spain and Portugal which triggered all-round depreciation of the euro against the dollar, the Marine Products Export Development Authority (MPEDA) pointed out. There was considerable increase in export of frozen shrimp and squid during the period. The trigger for this growth came from increased export of Vannamei shrimp, whose introduction and cultivation in India's coastline was a recent phenomenon as well as increased landing of squid from Indian waters. Frozen shrimp continued to be the major export item accounting for over 48 per cent of the foreign exchange earnings.

Keywords- Aquaculture Performance, Economic overview, India GDP, foreign exchange

I. INTRODUCTION

Shrimp exports increased by 12 per cent in quantity, 34 per cent in value and 40 per cent in dollar earnings. Unit value realisation for shrimp surged over 25 per cent during the period. Frozen shrimp export also showed a smart increase to major destinations such as the US and Japan. Export of Vannamei shrimp grew to 7,363 tonnes during the period. Frozen fish was the principal item of export in quantity and second largest export item in terms of value: accounting for 36 per cent of the total quantum of export and 18 per cent of the

value realization. Export of frozen squid accelerated by close to 88 per cent in terms of dollar earnings, 78 per cent in rupee realization and 60 per cent in quantity. Despite rapid growth in unit value realization of frozen cuttlefish by 30 per cent, the volume of exports declined by 21 per cent and rupee realization fell by 2 per cent.

The year 2011-12 has been a record year for the Sea Food Export sector. The Export touched US\$2.86 billion (an increase of 33%) amounting to Rs.12901 crore. Quantity increased to 830,000 tons (growth of 19%). This

has been one of the most successful years not only in terms of performance for the sector but also this has been a very fruitful year for almost all the exporters. During the course of this historic year, the Indian Seafood Export Sector was greatly distressed at the great tragedy that struck Japan, one of the pioneering and key trading partners which has contributed very significantly to our sector's growth during the formative years, and even till recently has been the largest importers of marine products from India. The present paper is The present paper is focused on review of aquaculture trends in the production of shrimp and scampi production in India. The data required for the study is collected from the secondary sources and the author is in the aquaculture products related business. The observations made in the market are presented as findings and suggestions and those are correlated with the secondary data. Simple comparative techniques are used to compare the results of the market and accordingly suggestions are presented. This paper can help in assessing the importance of aquaculture in improving the GDP and economic growth of the country.

2. OVERALL EXPORT OF MARINE PRODUCTS

During 2010-11 for the first time in the history of Marine product exports, the export earnings have crossed 2.8 billion US dollars. This is also first time

export has crossed all previous records in quantity, rupee value and US\$ terms. Export aggregated to 8, 13,091 tonnes valued at Rs.12, 901.47 crore and US Dollar 2,856.92 million. Compared to the previous year, seafood exports recorded a growth of 19.85% in quantity, 28.39% in rupee and 33.95% growth in US\$ earnings respectively. Average unit value realization has also gone up by 11.87%.

There is a considerable increase in export of Frozen Shrimp and Frozen Squid during the period. Large-scale production of Vannamei in addition to better productivity of Black Tiger shrimp and increased landing of Squid contributed for the increased. This was supported by better price realization of major items like Cuttlefish, Shrimp and Squid. The figures must be viewed in the light of the scenario of continuing recession in the international market, debt crisis in EU economies, continuing antidumping duty in US the sluggish growth in US economy.

Table-1: Export during 2010-11 compared to 2009-10

Export details	April-March 2010-11	April-March 2009-10	Growth %
Quantity Tones	813091	678436	19.85
Value Rs.crore	12901.47	10048.53	28.39
US\$ Million	2856.92	2132.84	33.95

2.1. Major Items of Export

Frozen Shrimp continued to be the major export value item accounting for 44.17% of the total US\$ earning. Shrimp exports during the period

increased by 16.02%, 36.72% and 42.90% in quantity, rupee value and US\$ value respectively. Fish, has retained its position as the major export item in quantity terms and the second largest export item in value terms, accounted for a share of about 38.42% in quantity and 20.42% in US\$ earning. Fresh Cuttlefish recorded a growth of 19.56% in rupee value and 25% in US Dollar terms. Unit value also increased by 34.18%, however, there is a decline in quantity (6.84%). Export of Fr. Squid showed a remarkable increase in quantity 42.53%, 62.31% in rupee value & 69.14% in US dollar realization. Unit value also increased by 18.67%.

2.2. Major Export Markets

European Union (EU) continued to be the largest market with a share of 26.78% in US \$ realization. Followed by South East Asia 16.43%, China with a share of 15.41%, USA 15.35%, Japan 13.06%, Middle East 5.19% and Other Countries 7.79%. The Marine Products exports have strengthened India's presence in Southeast Asia and Middle East where the increase in quantity has been 57% and 26% respectively. There is a significant increase in exports to African countries in comparison to previous year, although the total exports to Africa remains very low compared to other regions.

2.3. Export production through aquaculture

During the year 2010-11, production from aquaculture has continued to contribute significantly to

the seafood exports from the country. The increased production is attributed to a marginal increase in average productivity per unit area in the case of black tiger, comparative reduction of disease occurrence and adoption of better Management Practices. With introduction of exotic SPF L.Vannamei, the aqua farmers in Andhra Pradesh, Tamil Nadu, Gujarat and Maharashtra have utilized an area of 2930.32 ha during 2010-11 for farming of L.vannamei shrimp which has also contributed significantly to the increase of seafood export from the country.

3. SHRIMP PRODUCTION

During the year under report the total tiger shrimp production has been estimated to be around 118575.00 MT from an area of 113852.39 ha. State wise details of shrimp farming are and production are given in Table-2. Compared to the previous year production of 95,918.89 MT 102259.98 ha area, shrimp production has increased by 22656 MT that is 23.62% while addition area of 11,592.41 ha was brought under culture which contributed the addition production as well as increase of 11.34% in terms of area utilization. This was attributed to adoption of better management practices by aqua farmer, and increasing demand for cultured shrimp resulting in increased unit value and better raw material prices being offered to the producers. It is estimated that shrimps worth Rs.682.00 crore over 2009-10 (Table-3).

Table-2: State wise details of shrimp farming 2010-11

State	Area Developed (ha)	Area Utilised (ha)	Production (MT)	Productivity (MT/ha/year)
West Bengal	51,659.00	47,588.00	40,725.00	0.86
Orissa	15,174.00	5,324.00	7,520.00	1.41
Andhra Pradesh	58,145.00	42,055.00	49,030.00	1.17
Tamil Nadu	6,109.00	2,281.16	4,020.00	1.76
Kerala	15,099.39	11,787.90	8,075.00	0.69
Karnataka	3,708.84	1,715.00	2,090.00	1.22
Goa	867.00	305.00	320.00	1.05
Maharashtra	1,329.56	829.88	1,120.00	1.35
Gujarat	2,247.92	1,965.65	5,675.00	2.89
Total	1,54,339.91	1,13,852.39	118,575	12.4

Table-3: Shrimp Production through Aquaculture

Year	Live weight (MT)	Product weight (MT)	Estimated Value (RS.crore)
2009-2010	1,04,217.81	64,664.96	2,530.70
2010-2011	1,45,600.00	90,038.00	3,585.00
Increase	41,382.19	25,373.04	1,054.30
Difference	39.71	39.24	41.66

Source: Secondary data/ Seafood Export Journal/ Various issues.

Efforts taken by Marine Product Export development Authority (MPEDA) in motivating the aqua farmers in adoption of better management practices and adopting bio-security protocols have contributed significantly in improving the average production of shrimp per unit area from 940 kgs per hectares to 1040 kgs per hectare resulting in increase of productivity of 10.6% per hectare.

4. TOTAL AQUACULTURE PRODUCTION

Aquaculture production from export –oriented aquaculture during the year 2010-11 has improved significantly

over the previous year with increasing number of aqua farmers attempting to revive the activities by investing in the sector. The total production from aquaculture is estimated to be 1,45,600 MT with a total value of Rs.3585 crore (Table-4) that works out to an average farm gate price of Rs.246.00 per kilogram of wet weight. The Production has grown an increase of 39.71% (41381.19 MT) in volume and 41.66% (Rs.1054.30 crore) in value respectively over the previous.

Though it is anticipated that all the shrimp/scampi/L.vennamei produced from aqua farms would be exported, some quantities produced would have found its way to the domestic markets due to increasing demand for the seafood with attractive and remunerative prices even in the domestic market that are being realized for the produce.

Table-4: Total shrimp & scampi production through Aquaculture

Year	Live weight (MT)	Product weight (MT)	Estimated Value (RS.crore)
2009-2010	1,04,217.81	64,664.96	2,530.70
2010-2011	1,45,600.00	90,038.00	3,585.00
Increase	41,382.19	25,373.04	1,054.30
Difference	39.71	39.24	41.66

4.1 Outlook for 2011-12

MPEDA envisage an ambitious target of 4 billion US\$ Marine products exports for the year 2011-12. Increased production of L.Vannamei shrimp, increase in infrastructure facilities for production of value added items and the regaining pace of Japanese market after tsunami etc. are the helping factors to

achieve this target.

5. SUGESSTIONS TO IMPROVE AQUACULTURE CONTRIBUTION TO GDP

- 1.The sector can be recognized as allied agriculture activity and funding can be provided on the quantum merit basis.
- 2.The direct subsidies can be given to farmers to improve the interest towards industry.
- 3.The firm subsidies should not be given to traders.
- 4.Processing infrastructure needs to be improved and mechanization is need of the hour.
- 5.Organised sector is to enter into industry to improve its contribution and to have mass production.
- 6.Unorganized players need to be focused on quality and timely delivery of the products to the processing unit for better quality preservation.

6. CONCLUSION

Market potential of the industry is high and appreciable. Growth had remained relatively strong until the quarter ending March 2011-but clear signs of slowdown have emerged over the last 3-4 months. It was believed that the combination of factors-including persistently high inflation, higher cost

of capital, cut in fiscal spending to GDP, weak global capital markets environment and slow pace of investment-will cause a further slowdown in growth.

It was believed that over the next six months, support from all the major growth drivers will wane at the same time. A deeper slowdown in growth than estimated earlier. Hence, The F2012 GDP growth estimate was cut from 7.7% to 7.2% and FY2013 growth estimate from 8.5% to 8%. On a calendar-year basis, The new growth estimates are 7.3% and 7.8%, down from the old forecasts of 7.7% and 8.5% for 2011 and 2012 respectively.

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RELATIONSHIP BETWEEN BRAND PREFERENCE AND BRAND ASSOCIATION TOWARDS HOSPITAL

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ABSTRACT

In this article, the researcher finds out the relationship between brand preference and brand association towards hospital service. This research study falls under descriptive in nature. For collecting the relevant information, the researcher chosen one of the leading private hospital in Chennai, Tamilnadu, India. After getting permission from the hospital, the researcher contact HR manager to collect the patient details; those who are stayed minimum of 7 days and discharge within 3 months from the hospital. They know well about the particular brand services and recalling the perceived value care, the person may be contacted minimum of 7 days and within three months after discharge. The researcher gets an appointment from the patient for collecting the data through a schedule method. The schedule has been prepared and the statements are asked with 5 point likert's scale, where 1 stands for strongly disagree and 5 stands for strongly agree. 365 patients are chosen by convenient sampling method. Descriptive statistics and correlation analysis were done to find the relationship. It is found that the brand is highly preferred by the patients because of its services and the intensity level of agreeing the brand association found to be significantly varied among the respondents. There is a significant relationship between brand preference and brand association.

Key words: Brand Preference, Brand Association and Relationship.

1.INTRODUCTION

Brand preference refers to a patients preferred brand of the hospital most likely to be chosen by the patient when a need arises. Brand preference is defined as a patient tendency towards a hospital over various other hospitals based on the significant beliefs that the brand (hospital) preferred would provide more benefit than the other brands at a given point of time. For

hospitals, because of perceived high risk involved with a health care choice the characteristics surrounding the decision task can be complex and difficult. Decision about health care, patients will rely on a branding as a primary means of making the decision. Prospective hospital patients tend to rely on opinion and ideas of those they consider to be experts and those they can trust.

Brand association, defined as (Aaker, 1992), “includes brand attributes, customer benefits, uses, users’ lifestyles, product classes, competitors and countries”. Brand association plays an important role in product or service evaluations and choices by a consumer because it helps consumers to develop the sort of mental image a brand stimulates either positive or negative. In fact, a positive brand association provides marketers with the means to secure and develop market share. It further determined that utilization of brand association and how it is promoted is a central element for success (Dean, 2004). This component comprises the values, attributes, traits and personalities associated with the brand. Brand identity refers to those associations that the brand manager hopes or intends to establish through various promotional and communication activities. Brand attributes, on the other hand, refers to how the brand is actually seen by customers and prospects at a point in time. Thus, there is often a major difference in what the organization believes or feels about the brand and the experience that customers and consumers have with the brand. Achieving alignment between the desired brand identity and the actual image held by customers is one of the key challenges faced by brand managers.

Brand associations are fundamental to a hospital’s understanding of inference making, categorization, product evaluation, persuasion and choice. For a hospital, factors that might influence brand association include the patient’s perception of each of the following: (a) the image of the hospital (b) the hospital’s ethical standard (c) the community with other patients (d) the hospital’s contribution to society through community sponsorship and citizenship (e) the perceived association a patient has with a brand (f) the sense of religious caring and finally (g) being well established and having a secure future. Brand association is important for patient-based brand management because it is the one factor that is linked to the patient’s memory to a particular brand. A set of brand associations organized in some meaningful way constitute the overall brand image in the mind of the consumer. Hospitals can benefit significantly from this, because they can help consumers distinguish differences among competitive brands and may serve as a trigger in recalling a particular brand in a highly competitive situation.

Brand association is anything which is deep seated in customer mind about the brand (hospital). Brand association is the attributes of brand

which come into consumer's mind when the brand is talked about it. It is related with implicit and explicit meanings which a consumer associates with a specific brand name. Brand association will lead people to ask for something by brand instead of generic name for product in the category. Brand association is played an important role in service evaluation and choice by patients. Because, it helps patients to develop the image of the brand. In this study, brand association includes the brand value, brand attributes and brand affect.

1.1 Background

Marketing practitioners, as well as theorists, implicitly assume that consumer preferences for brands are a complex function, where behavior is a function of the interaction of the person with his or her environment (Stanton & Lowenhar, 1974). In fact, the brand preference is most often cited in conjunction with the concept of the self-image congruence or personality congruence (Aaker & Day, 1974; Grimm, 2005). Personality congruence implies that consumers associate different types of characteristics that reflect themselves to a particular brand. For example, if a consumer views himself or herself as friendly, personality, congruence implies that choice of a brand was due to the consumer perceiving the brand to be friendly as well.

While consumer behavior may be viewed as the acquisition, consumption and disposition of products, services, time and ideas through various decision making units (Jacoby, 1976). Understanding how consumers behave when retrieving a particular brand or service from memory and how it influences the consumer's brand preference has been the topic for some researchers throughout the last three decades. In fact, brand preference is defined as a consumer's tendency towards a brand over various other brands based on the significant beliefs that the brand preferred would provide more benefit than the other brands at a given point in time (Fishbein & Ajzen, 1975; Mitchell & Olson, 1981). Other researchers (D'Souza & Rao, 1995) have determined that advertising, more than competition, can influence brand choice, especially with regard to the role of a brand name in preference. There is also discussion over the last few years regarding how preference is affected by such things as brand image, brand commitment, brand loyalty, brand relationship, brand attitude, brand attention, satisfaction and or several combinations of each of these factors (Foster & Cadogan, 2000; Klemz & Boshoff, 2001; Wong & Sohal, 2002).

1.2 Objective of the study

To find out the relationship between brand preference and brand association towards hospital service.

1.3 Hypotheses

Brand preference and brand association have positive relationship.

2. METHOD ADOPT FOR THE STUDY

This research study falls under descriptive in nature. For collecting the relevant information, the researcher chosen one of the leading private hospital in Chennai, Tamilnadu, India. After getting permission from the hospital, the researcher contact HR manager to collect the patient details; those who are stayed min of 7 days and discharge within 3 months from the hospital. The researcher gets an appointment from the patient for collecting the data through a schedule method. The schedule has been prepared and the statements are asked with 5 point likert's scale, where 1 stands for strongly disagree and 5 stands for strongly agree. 365 patients are chosen by convenient sampling method. The schedule is filled by the researcher personally contacting the sample patients. After collecting the data it was coded and entered in to SPSS 15 software package for further analysis. The data are analyzed with the appropriate statistical tools like

Friedman's multiple comparison tests and Correlation.

2.2 Instrument Used

2.2.1 Brand association

Gladden and Funk (2002) have used 25 items to measure brand association. For this study, 16 statements are considered and modified. The variable brand association is measured with three dimensions, namely, brand value with four statements followed by brand attributes with seven statements and brand affect with five statements. 2.2.2 Brand preference

Amira Elleuch (2008) has used 11 statements for measuring brand preference of patients. But, totally six statements are taken into consideration for measuring the variable brand preference.

3. RESULTS AND DISCUSSION

It is a fact that the branded hospital has a unique character in its services. Table-1 shows the patient opinion towards their brand preference. Brand preference is measured with six statements. The calculated mean value ranges between 4.21 and 4.60. This value indicates that the brand preference towards this hospital is high. The standard deviation value ranges from 0.72 to 0.83. Brand preference assesses the respondents' opinion on the reasons for selecting this brand. Patients prefer this brand

because of safety, professional appearance, promised services, error free treatment and it serves best interest of patients. These reasons are strongly agreed by the patients. It is observed that the brand is highly preferred by the patients because of its services.

categories. Respondents believe that this brand has been very safe and it is individually contributing towards brand preferences and gets the first category. Professional appearance, serving with best interests and prompt services are jointly contributing towards brand

Table-1: Respondents' opinion towards brand preference

Factors	Mean	SD	Friedman's test Mean Rank value	Chi square value	Multiple Comparison Test
Safe to me	4.60	0.72	4.19	158.5*	1 2,3,4 5,6
Professional appearance	4.44	0.76	3.72		
Best interests of patients	4.35	0.74	3.44		
Prompt service	4.32	0.74	3.38		
Inform when the service will be provided	4.22	0.76	3.14		
Error free treatment	4.21	0.83	3.13		

Source: Primary data computed; * Significant at one percent level.

Friedman's test is applied to examine the above mentioned hypotheses. The result shows that Friedman's mean rank lies between 3.13 and 4.19. The calculated chi square value is 158.5 and it is found to be significant at one percent level. It is identified that respondents' perception are significantly varied to preference level of the brand. Further, Friedman's multiple comparison test is applied to know the highest contributing factors among the six factors to the brand preference. After applying the test, six factors are grouped into three different

preferences and gets the second place and finally patients are informed when service will be performed and error free treatment jointly contributes towards brand preferences and occupied the third place. It is found that the respondents preferred this brand because of safety and professional appearance. Marketing literature also suggests that the preferred brand would provide more safety than the other brands (Fishbein & Ajzen, 1975; Mitchell & Olson, 1981). Professional appearance of brand is the important cues of quality (Barone, Taylor &

Urbary, 2005). When the brand is safety and has professional appearance, it can induce the respondent's preference (Woodside et al., 1989) Brand preference is a process by which the consumers simplify their choices by reducing the number of brands they choose from (Roberto & Natangeto, 2007). Hence, brand preference is a key step to select the brand. Past literature shows that the experience with the brand affects the propensity of brand preference (Fazio & Zanna, 1981). Patients have more choices, more information and higher expectations than ever before. Hence, their brand preference is selective demand. Obtaining and sustaining the brand, brand preference of customer is an important step on the road in gaining brand loyalty.

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categories. Respondents believe that this brand has been very safe and it is individually contributing towards brand preferences and gets the first category. Professional appearance, serving with best interests and prompt services are jointly contributing towards brand preferences and gets the second place and finally patients are informed when service will be performed and error free treatment jointly contributes towards brand preferences and occupied the third place. It is found that the respondents preferred this brand because of safety and professional appearance. Marketing literature also suggests that the preferred brand would provide more safety than the other brands (Fishbein & Ajzen, 1975; Mitchell and Olson, 1981).

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& Zanna, 1981). Patients have more choices, more information and higher expectations than ever before. Hence, their brand preference is selective demand. Obtaining and sustaining the brand, brand preference of customer is an important step on the road in gaining brand loyalty.

Brand association comprises the brand value, brand attributes and brand affect. Brand association is measured with sixteen factors in three dimensions as brand value, brand attributes and brand affect. Respondents are asked to rate their opinion towards brand association. The calculated mean value and standard deviation value is shown in the table-2 Brand value has been assessed with four statements. Mean value ranges between 3.89 and 4.47 and standard deviation value ranges from 0.79 to 0.84. This value indicates that the respondents perceive high level of brand value.

Table-2: Respondents opinion brand association

Brand association Dimensions	Factors	Mean	SD	Friedman's test Mean Rank value	Chi square value	Multiple Comparison Test
Brand value	Ambulance services available	4.47	0.84	3.06	78.5*	1 2,3,4
	Availability of blood	4.17	0.72	2.51		
	Availability of medicine	4.08	0.58	2.33		
	Value for money	3.89	0.79	2.10		
Brand attributes	Rooms are quiet clean	4.62	0.76	4.67		5,6,7
	Comfortable ambient conditions	4.60	0.76	4.67		
	Visually appealing of physical	4.57	0.70	4.54		
	facilities				210.2*	8,9 10,11
	Employees are punctual	4.38	0.76	3.89		
	Employees are respectful	4.37	0.69	3.87		

	Convenient time for admission and discharge	4.20	0.83	3.49		
	Hygienic food	3.99	0.76	2.90		
Brand affect	All treatment under one roof	4.52	0.73	3.71	402.2*	12,13
	knowledgeable employees	4.48	0.72	3.67		14
	Adequate number of employees	4.07	0.83	2.88		15,16
	Hospital adopts innovation	3.86	0.74	2.43		
	Treatment are adequately explained	3.64	0.99	2.31		

Source: Primary data computed;

* Significance at one percent level.

Friedman's test is conducted to know the intensity level of the respondents towards brand value. Friedman's mean rank value lies between 2.10 and 3.06 and chi square value is 78.5, which is significant at one percent level. Further, Friedman's multiple comparison test is applied to identify the highest contributing factors to the brand value. The test results grouped the four factors into two categories. In that, availability of ambulance service plays a major role

towards brand value and also it is placed in the first place. The remaining factors namely availability of blood, medicine and value for money jointly influences the brand value and falls in the second level. Brand attributes is measured with seven statements. It is observed that the calculated mean value is from 3.99 to 4.62 and standard deviation value ranges between 0.69 and 0.83. Clean rooms, ambient condition and visually appealing physical facilities secure high mean value. It infers that the respondents highly perceive these products attribute values. To identify the intensity level of

the respondents towards brand attributes Friedman's test is applied. Friedman's mean value ranges between 2.90 and 4.67. Chi square value is 210.2 and found to be significant at one percent level. It indicates that respondents' perception significantly varied to the quality of brand attributes. The Friedman's multiple comparison test is applied to identify the major contributing items towards the brand attributes. The result grouped the seven factors into three different categories. Neatness of the room, pleasant atmosphere and visually appealing physical facility together influence to the brand attributes and falls in to first group. Punctuality and respectful towards patients, jointly contributes to the brand attributes in the second level. Convenient admission, discharge timings and availability of hygienic food together induce the brand attributes and places in the third level. Brand affect has been assessed with five items.

The calculated mean value is ranges from 3.64 to 4.52 and the standard deviations value ranges between 0.72 and 0.99. While reading the above value it clearly indicates that brand affect towards the hospital is high among the respondents. All treatment is made possible under one roof, employees are knowledgeable in their jobs and availability of adequate

number of employees are highly favored by the respondents.

Friedman's test is applied to assess the intensity level of respondents towards brand affects. The Friedman's mean rank falls in the range of 2.31 and 3.71 and chi square value is 402.2, which is significant at one percent level. So the respondents perception is significantly varied towards the brand affect.

Further, Friedman's multiple comparison test is applied to identify the highest contributing items to brand affect. The test result shows that five items in brand affect is formed into three different categories namely, all treatment under one roof and employees are knowledgeable combined together to form the first category followed by the adequate number of employees which is individually contributing toward brand affects at second level and adopting innovative technology and explanation of treatment result jointly influence the brand affect and fall to the third category. In overall, variety of services namely, any time ambulance services, availability of blood, medicine and value for money are the important factors that creates brand value. Neatness of the room, comfortable amenities and visually appealing of physical facilities influences the brand

Table-3: Relationship between brand preference and brand association

Brand Variables	Brand Association		
	Brand value	Brand Attributes	Brand Affect
Brand Preference	0.518**	0.732**	0.782**

Source: Primary data Computed, **Significance at five percent level.

attributes. All treatments under one roof and knowledgeable employees are inducing the patients to have brand affect. The importance of specific services and availability was justified by its influence on the brand value (Gladden and Funk, 2002)

Physical appearance, relaxation and physical and psychological well-being refer to the benefits that an individual expects by using a service (Davis et al., 1995; Markland and Hardy, 1993; Recours et al., 2004). Brand affect dimension is built based on consumer emotion and feeling about particular aspects. In the fitness club, the knowledgeable trainer, availability of new equipments, explanation about the exercise is to be influenced the customer towards brand affect. It is also found that the availability of all forms of exercise under one fitness club is very much affected on the brand by the customer (Zeithmal et al., 2006). Stigler (1961) found that advertising which provides information about brand attributes such as physical traits will influence brand association. Light (1990) reported a brand value, brand

attributes and brand affect have the positive relationship with brand association. In series of experiments, Kirmani Anna and Peter Wright (1989) found that the perceived experience of a brand can influence consumer expectations of a brand value.

Table-3.3: Relationship between brand preference and brand association

A brand represents a company's product or services. In today's scenario, brands encompass much more than this. Brands represent the whole business, including its employees. In order to examine the research hypotheses, pearson correlation is employed. Table-3 explain the inter relationship among brand preference and brand association. From the r-values, it is inferred that the study variable are having relationship within itself, because r-values are significant and also positive. Hence, the stated hypothesis (H05) gets rejected. The respondents have expressed that their preferred brand is having high level of brand association. Brand preference has secured the high level of correlation with brand association (brand affect) by

0.7832 followed by brand attributes and brand value. From the table 1.3 it is inferred that brand preference has the high relationship with brand association. From the correlation values, it is noted that the patients are preferred the particular brand because of brand affect than brand value. It shows that the patients are having more affection towards particular brand due to the customer service of brand. The result has indicated that the patients experience good amount of positive relationship with the brand association. Brand preference has a relationship with market, based on cumulative customer experiences. The entire value of the service offering is tied to the perceptual experience of the brand. They feel that the brand is more suitable for them. The patients attain a high level as regards brand image, which proves that this is one of the trusted hospitals.

4. FINDINGS

Patients are preferred this brand because of safety, professional appearance, promised services, error free treatment and it serves the best interest of patients. These reasons are strongly agreed by the patients. It is found that the brand is highly preferred by the patients because of its services. And, the intensity level of reason for preferring this brand is significantly varied among the patients.

Brand association comprises the brand value, brand attributes and brand affect. Brand value, in that, availability of ambulance services, availability of required blood group in the blood bank, availability of prescribed medicine in the pharmacy and value for money are found to be influenced the brand value. Rooms are quiet clean, ambient condition and visually appealing of physical facilities found to be predicts the brand attributes value. All treatment is available under one roof, employees are knowledgeable in their jobs and adequate number of employees is highly favored by the respondents. Because of that, brand affects towards the hospital is found to be high. The intensity level of agreeing the brand association found to be significantly varied among the respondents.

5. MANAGERIAL IMPLICATION

In case of brand preference, error free treatment is perceived at the lower level, which is much important compared to professional appearance, informing the service, etc. Implementing quality circle may reduce even the small errors. To have better brand association, the hospital must focus more on first loading factors of brand value, brand attributes and brand affect.

Brand association plays an important role in-service evaluation

and choices by the consumer because it is how consumer develops the most of mental image a brand stimulates. When the brand is seen as positive, that attributes, benefits and uses would have positive influence on brand image. A hospital is drive to increase brand religious caring. Consumers want hospital to focus more on the internal aspects of a hospital such as better care, better treatment and better overall quality for a patient.

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INNOVATIVE MANAGEMENT PRACTICES FOR WOMEN ENTREPRENEURS

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ABSTRACT

Women entrepreneurs mainly as a result of innovation have found to have traits different from their male counterparts and yet they grapple with similar business issues identify the need to continuously change and innovate. This present study investigates the characteristics of innovation and its influence as a success factor for female entrepreneurs in Cuddalore District of Tamilnadu. Based on the exploratory nature of the analysis, a qualitative approach is adopted. Fifty women entrepreneurs are interviewed regarding their perception and implementation of innovation, as well as the problems they face and their solutions to those problems, based on the responses. The study has particularly provided the direction on women's development in the area of grade and innovation.

Keywords: innovation, entrepreneurs, qualitative, exploratory, problems.

1. INTRODUCTION

Women entrepreneurship development is an essential part of human resource development. The development of women entrepreneurship is very low in India, especially in rural areas. Entrepreneurship amongst women has been a recent concern, women have become aware of their existence, their rights and their work situation. However, women of . middle class or not to eager to alter their roll in fear of social back class. The progress is more visible among upper class families in urban cities.

The Indian economy has been witnessing a drastic change since mid – 1991. With new policies of economic

liberalization, globalization and privatization initiated by the Indian government. India has entrepreneurial potential. At present, women involvement in economic activities is marked by a low participation rate, excessive concentration in the unorganized factor and employment in less greed jobs. The significance women entrepreneurs have been increasingly feet over the past degrades. In developed countries women own 25% of total Business and or starting of new ones at a faster rate than man (Woldie and Adersua, 2004.) Apart from contributing to economic growth, female entrepreneurs and diversity and choices in the business environment (Verheal

et al, 2006) and improve opportunities for gender equality (Eddleston & Powell, 2008). Studies in developing countries have shown that those with the highest economic growth such as china or also the once were women or highly active in business (Tambunar, 2009).

1.1 Entrepreneurship and innovation

The innovation of the entrepreneurs as an innovator is believed to have been conceived by Schumpeter, 1934 who argues that the function of an entrepreneur is to reform or revolutionized the pattern of production by explaining new or untried technology and process in line with the definition submitted by Schumpeter, 1934, Zaltman et al., 1973 and Damanpour, 1991, Johannessen et al, 2001 proposed that innovation is miserable by the degree of 'Newness' adopted with respect to product service, process market and supply and administrative function. Innovative skills have generally been accepted as one of the critical attributes of successful entrepreneurs (Prucken, 1985 Cohell, 2001: Johnson, 2001). Some of the most profitable companies the world have associated their growth with innovation which they perceive as the ability to change reinvent themselves as a way to exploit opportunities. In recent literature,

studies have been focused on two major areas, to examine how exactly entrepreneurs use innovations to increase organizational performance and true determined the organizational cultures Zhao (2005) discover that entrepreneurs use innovations to expand business scope and boost organizational growth. Innovation is also a critical factor in the implementation of other sound management practices including total quality management (Ehigle & Akpan, 2004). These findings support earlier hypothesis by Kanungo (1999) and Sundvo (1998) that entrepreneurs exploit the innovative culture as an opportunities for developing new products are services and penetrating new markers thus innovation and growth make up a never ending cycle.

2. REVIEW OF LITERATURE

In an capitalism survive, Joseph Shumpeter , 1952 are gives that the function of an entrepreneur is to reform or revolutionize the pattern of production by re exploiting new or unread technology and processes. The nation of the entrepreneurs as an innovator is thus believed (Hisrich Speters, 1998) to have been conceived by Shumpeter. Since then innovative skills have generally been accepted as one of the critical attributes of successful entrepreneurs (Chel 2001, Johnson, 2001). Some of the most profitable companies in the world have

associated their broke with innovation, which they persive as the ability to change and reinvent themselves as a way to exploit opportunities. In most studies an entrepreneurial innovation (Gudmundson et al., 2003), Haylon et al., 2003, Shane, 1993; Thomos and Mueller, 2000. To common characteristics have been observed one, men or the majority respondents and two, there is no attempt to distinguish male and female responses to a particular stimules. Socialogist (Belt and Williams, 1999; Hofstede, 1998) have often described behavioral differences between men and women in certain cultural settings, Herculine societies in particular, a except men to be aggressive and women to be passive. They consistently empesised male-female differences in social status and rules as result men and women choose different subject at school and different careers, and they treat sons and daughter differently at home. Thus, through this “ Social conditionary” process masculiaity area cultural value – in between gender differentiated behaviours with this in mind any research which combined men and women as a single sample is beloved to be seriously .

When applying the concept of innovation to entrepreneurs, the general definition of referred by Zaltmer et al. (1973) is perhaps the most relevant to

the current study as it includes individuals as possible unit of analysis, by doing the authors have made the measuring of innovation much earlier as the degree of lovely or such may be measured based only on the entrepreneurs perception. It is concurrent with the definition proposed by Roges and Shurmaker (1979) in the sense that something in an innovation if the individual himself / herself sees it as new regardless of here other members of the society perceive it.\

2.1. Innovation

Schumpeter is highly regarded as an outstanding researcher who successfully tied entrepreneurship to innovation. He linked innovation with the need for entrepreneurs to innovate new service qualities, processes, market segments source of supplier or industries (Baumol, 1993), Later he reconstructed several new categories can be behaviour to distinguish business organizations based on the substantial level of innovation such as high and low degree of innovative entrepreneurship. Wickhen (2004) however added three different dimensions i.e, innovation, growth, potential and objective that need to be viewed as a complementary allowed for differentiating small businesses from entrepreneurial ventures

3. RESEARCH METHODOLOGY

A survey was conducted to collect primary data needed for this study. The questionnaire gathered respondent's information as demographics and type of businesses. Also, women entrepreneurs were identified through personal references and interviewed based on a series of open-ended Questions purposive sampling techniques is required to select information-rich cases from which one can learn a great deal about issues critical to the research objectives. Each interview to place at the respondents business premise and asked approximately an hour. In some cases a brief tour of the premise was also provided which gave the author a first hand opportunity to observe some of the innovations implemented by the entrepreneurs. The women were asked to describe the types of innovation carried out in their businesses and how they were implemented the challenges faced in these process, and how these challenges were overcome.

4. DISCUSSION OF RESULTS

According to the Table -1, The majority of the respondents were aged between late twenties and early thirties. Majority of them had received at least higher secondary education. Most of them were married and had children. In manufacturing businesses majority of

the respondents were in partnership with other businessman. When asked why they preferred to go in to their business, reasons were varied among themselves. Half of the respondents suggested economic necessity as the main motivator.

Table-1: The profile of the respondents by personal interviewed

No. of Respondent	Age	Education	Marital status	Type of Business	Experience	Type of ownership
6	Upto 30 years	Higher secondary	Married	Canteen Operator	Upto 5 years	Partnership
5	31-40	Degree	Married	Beauty centre	Upto 4 years	Sole trade proprietorship
5	41-50	Degree	Single	Cookies manufacturer	Upto 6 years	Partnership
4	Above 50 years	Higher secondary	Married	Construction material	Upto 10 years	Sole trade proprietorship

In canteen operating business the respondents inform that they had been a house wife for a long time, so going in to a business was the most obvious solution. On the other hand, some of the respondents like cookie manufacturer suggested personal savings and family as the main sources of fund. In the case of construction material supplier suggested that to lead a wholesome life for their family welfare. The most common types of innovation among the respondents appeared to be product or service related. In the case of cookies manufacturer, they use the different

flavors, colors and designs of cookies to attract the customers. In case of beautician, the trends are hair coloring and bonding, hair stylish techniques. Flexibility of time to the customers is another innovation from one of the respondents

5. CONCLUSION

In general, the study had found some empirical support for researchers who have argued for further discourse women related studies. As evidence in the study, women find relationships and networking critical in the start up phase as well as the long term growth of the business and the types of innovation. The present findings suggest that women entrepreneurs to operationalise their innovation are product, service, supply, market, process and administrative innovation (DamanPour, 1991 & Johaneseen et al., 2001).

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LEVEL OF TEACHERS STRESS: A DEMOGRAPHIC STUDY

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ABSTRACT

Now a days the youngsters become very violent in nature, the reason may be the base of their life is not understood clearly either in their home and in their schools. In home the parents are not able to take care of children because of their busy schedule, and in schools the teachers may be burden and stressed with their heavy work load or because of the gender preferences in the society, age , qualification, unsupported family, spouse education and employment, not having the enough time to spend with their family, the type of school they are working, designation, marital status, family type, the size of the family, travelling time and distance, income and so on, so study results and suggestions of these demographic variables will lead to stress less life for the teachers in the present situation.

Keywords: Age, Designation, Family type, Gender, Income, Level of stress.

1. INTRODUCTION

Stress is an occurrence that must be recognized and addressed in various professions- the teaching profession is no exception. In recent years, inclusive education has risen to prominence, which changed the traditional roles of teachers, from using a “talk and chalk” method, to being more pupil-centered. Research highlights that teacher’s experience with respect to inclusive education is very limited, and that they do not have the skill and disposition to handle diversity (Engelbrecht Swart,E & Eloff, 2001).

Exposure to chronic stress can cause teachers to experience symptoms of burnout. This robs the individual of the will to achieve, and contributes to the development of a lowered sense of self-esteem, decrements in work performance, cynicism and apathy. Since too much stress will affect the teacher's physical, psychological and behavioural responses it will, in return, have a negative impact on students (Calabrese, 1987). A stressor is an experience or situation within or outside the individual, which elicits a stress response. It is the individual's unique perception, which determines

whether the stress is viewed as negative or positive (Hayward, 1993). The vast majority of teachers do encounter discipline problems, as stressors, both in and outside the classroom. One of the frequent causes of stress in secondary schools is learners disrupting the process of education and low levels of motivation.

1.1 Definitions of job stress

Borg (1990) conceptualizes teacher stress as negative and potentially harmful to teachers' health. The key element in the definition is the teacher's perception of threat based on the following three aspects of his job circumstances.

1. That demands are being made on him.
2. That he is unable to meet or has difficulty in meeting these demands.
3. That failure to meet these demands threatens his mental/physical well being."

United States National Institute of Occupational Safety and Health,

Cincinnati, (1999), defined Job stress as "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury".

Discussion document presented by United Kingdom Health and Safety

Commission, London, (1999) Explains stress as "Stress is the reaction people have to, excessive pressures or other types of demand placed on them".

1.2 Teachers and stress

The report, The Scale of Occupational Stress: further analysis of the impact of demographic factors and type of job, published in 2000, found that 41.5% of teachers reported themselves 'highly stressed', while 58.5% came into a 'low stress' category, while 36% of teachers felt the effects of stress all or most of the time. This is indeed an alarming state and visibly also the biggest reason for school teachers quitting at a very high percentage or seeking professional help to fight back stress. The figures from teacher's support line, USA, show different reasons that cause distress to teachers:

- Stress, anxiety and depression 27%
 - Conflict with managers or colleagues 14%
 - Pressure of workload and excessive changes 9%
 - Loss of confidence and performance anxiety 9%
 - Relationship, marital and family problems 5%
- This shows that the highest percentage is job related stress that can wreck a professional teacher personally while discharging his duties.

2. REVIEW OF LITERATURE

This study employed the descriptive-correlation research design to determine whether secondary school teachers experience work-related stress. Participants included 239 teachers selected from schools in the Hhohho region of Swaziland. A questionnaire was used as the instrument to determine the level of work-related stress experienced by these teachers. Findings showed that teachers were moderately stressed by their work. Contractual problems and the nature of their work were two aspects that were reported to be the main stressors for the sample, while the work environment and work relationships were only mildly stressful. There was a weak relationship between the level of work-related stress and the demographic variables of gender, marital status, and qualifications. Age had a moderate significant relationship with the level of work-related stress for the sample. The study recommends that stress management programmes for teachers are imperative to deal with the consequences of stress.

Abdul (2012), the purpose of his study was to explore the level of occupational stress among university teachers based on age, gender and type of organization. The Questionnaire is used after pilot testing in order to accomplish the desired objective with the help of respondents' responses.

Descriptive statistics, inferential statistics, frequency tables, and ANOVA analysis have been used to analyze the data. Although the level of female and private sector university faculty is high, the study found that no significant difference between stress level of male and female faculty. No significant difference between stress level of faculty members of public and private sectors universities is reported. The results indicate significant difference in the mean scores of faculty members having different age brackets regarding their perceived level of stress. The statistics shows the decreasing trend of stress with the increasing of age among the faculty members.

Rita (2012), the study attempts to study the Burn-out among primary school teachers in relation to their demographical variables. The research was carried out with the total of 100 primary school teachers of Faridabad district, Haryana.

Ritu (2012), in recent years, we have seen a rise in stress across all spheres of life, particularly in the work place. It is not surprising that we are seeing work place stress emerging as a major cause of physical and mental health problems. Stress is an individual's physical and mental reaction to environmental demands/pressures. Stress, in general

and occupational stress, in particular is a fact of modern day life that seems to have been on the increase. Occupational (job, work, workplace) stress has become one of the most serious health issues in modern world as it occurs in any job and is even more present than decades ago. Occupational stress, in particular, is the inability to cope with the pressures in a job because of poor fit between someone's abilities to his/her requirements and conditions. This investigation is an attempt to study the occupational stress in some of the demographic variables. A sample of 100 primary school teachers was selected and The Occupational Stress Index (OSI) by A.K. Shrivastva was used for collecting data. The response rate was 80%. Data was analyzed by using statistical techniques like mean, SD and t-value. It was found that the teachers have moderate level of occupational stress. Male and female teachers did not differ in their levels of occupational stress. The teachers working in Govt. and Private schools were not found to differ in their level of occupational stress.

3.STATEMENT OF THE PROBLEM

In relation to the profession of teaching, where a teacher is viewed as dispensers of knowledge; teachers are increasingly perceived as facilitators or managers of knowledge. They work in a constant socially isolated environments

surrounded by hostile views and sometimes threat of physical abuse, and at the same time under a constant fear and threat of accountability for each and every action of both own self and that of the pupil. This alone can be a sufficient cause for stress for an individual. But in the case of a teacher it is multiplied by other factors as well. Teaching has been identified as one of the most stressful professions today. The reasons for that are quite similar to other stressful occupations in the world. In a survey assessing the stress levels of various jobs by the Health and Safety Executive, teaching came out top. Unlike past days teachers are experiencing more amount of stress from all sides of their job. They are working under various pressures from all faces of life such as family, professional, social and financial which in turn has a major impact on their health. Because of high stress they are not in a position to perform better. Their potential are unutilized. The personal factors of the teacher have a major impact on their level of stress they experience. Study about the influence of their personal factors will be a worthwhile one and leads to lot of changes in the performance of teachers. As far as our knowledge is concerned no exclusive studies have done to analyse the relationship between demographic variables and level of stress. Hence this study fills an important gap.

4. OBJECTIVES

- To measure the level of job stress among school teachers
- To measure the level of job stress based on the demographic variables.

5. RESEARCH METHODOLOGY:

A descriptive comparative research design was used to investigate levels of Job stress, reported by Public, Private-Aided, Private-Unaided school teachers in Cuddalore district. According to the statistics provided by DISE (District Information System for Education) and DSE (Department of School Education (2011), Total populations of teacher's professionals from Public School teachers, Private –Aided, and private- Unaided School teachers in Cuddalore District are 17,393. So, simple random sampling used in this research. By using Sample size determination formula for known population the calculated sample size is 376. 440 questionnaires were circulated out of that 390 was returned with complete information. Hence the sample size is 390.

6. HYPOTHESES

Demographic factors does not have significant relationship with teacher stress.

Table-1: Chi- Square test result to find out the association between level of stress and Designation

Stress level	Designation		Total	Value	P-value
	Secondary Grade	B.T			
Medium	208	17	225	46.671	.000
High	107	58	165		
Total	315	75	390		

H₀: There is no association between level of stress and designation

Chi-Square test is carried out to find out the association between level of stress and type of school. The chi-square test results shows that 208 secondary grade respondents having medium level of stress and 107 secondary grade respondents having high level stress, out of 75 Bachelor teacher respondents 17 of them having medium level of stress and 58 of them having high level of stress. Totally 225 respondents having medium level stress, 165 respondents having high level stress. The chi-square value is 46.671 with respective p-value 0.00 so there is significant statistical association between the level of stress and Designation, so the Null Hypothesis is rejected and Alternative Hypothesis is accepted. The study by Aqsa Akbar (2011) also found significant insights in the average stress scores of faculty members in these schools with respect to various background variables. It is found that average stress scores of the faculty members in the Business Schools have

significant differences due to their designation, as high stress is associated with lower designations. So stress & designation moves in opposite direction; higher the designation, lower will be the stress. Similarly, high stress is associated with faculty members having low qualification and as the qualification increases, stress decreases.

Table-2: Chi- Square test result to find out the association between level of stress and years of experience until Retirement

Stress level	Years of experience Until Retirement			Total	Value	P-value
	1-5	6-10	more than 10			
Medium	9	95	121	225	72.173	.000
High	26	9	130	165		
Total	35	104	251	390		

H₀: There is no association between level of stress and years of experience Until Retirement.

The association between the level of stress and years of experience until retirement is find out with the help of chi-square test. The table inferred that there are 251 respondents having more than 10 years of service till for retirement out of them 121 having medium level of stress, and 130 respondents having high level of stress. Out of 104 respondents having 6-10 years of experience 95 of them having medium level of stress and 9 of them having high level of stress. It may be due to work burden in the school. Totally 225 respondents having medium level stress, 165 respondents having high level stress. Rytsala (2005) Rytsala, Melartin and Iestcelä Diagnosed major depression is the

dominant psychiatric disorder causing functional and work disability, and is reported to be the fastest increasing reason for early retirement. The present study the chi-square value is 72.173 with respective p-value 0.00 so there is significant statistical association between the level of stress and years of experience till retirement, so the Null Hypothesis is rejected and Alternative Hypothesis is accepted.

Table-3: Chi- Square test result to find out the association between level of stress and Age

Stress level	Age						Total	Value	P-value
	< 25	26-30	31-35	36-40	41-45	>45			
Medium	17	0	111	0	88	9	225	1.363	.000
High	18	24	80	17	0	26	165		
Total	35	24	191	17	88	35	390		

H₀: There is no association between level of stress and Age

The association between the level of stress and age is find out with the help of chi-square test. Here 80 respondents of the respondents in the age group 31-35 reported with high level stress and 111 respondents reported with medium level of stress. The 35 respondents having more than 45 years of age out of that 35 26 of them having high level of stress and 9 of them having medium level of stress. There are 24 respondents in the age group of 26-30 all of them avail high level of stress. Totally 225 respondents having medium level stress, 165 respondents having high level stress. The result supported by Jaita Mondal (2011) according to his study was found

that the teachers of >25 to ≤35 years of age were less satisfied in Job Role item than the other two groups. From this finding it can be said that the age has a significant role on the job stress and job satisfaction. The mid age teachers were having more stress and less satisfaction, might be because these age people were ambitious and building their career. This time they need more support from the management. The present study the chi-square value is 1.363 with respective p-value 0.00 so there is significant statistical association between the level of stress and age, so the Null Hypothesis is rejected and Alternative Hypothesis is accepted.

Table-4: Chi- Square test result to find out the association between level of stress and Gender

Stress level	Gender		Total	Value	P-value
	male	female			
Medium	68	157	225	5.617	.018
High	69	96	165		
Total	137	253	390		

The association between the level of stress and gender is found out with the help of chi-square test. From the table it is inferred that male respondents available are 137 out of that 68 of them having medium level of stress and 69 of them having high level of stress, there are 253 female respondents available out of that 157 of them inferred with medium level stress, and 96 of them having high level of stress. Female respondents having high level of stress than the male respondents, this may be

due to taking care of family and the work simultaneously by the female respondents, totally 225 respondents having medium level stress, 165 respondents having high level stress. The results supported by Aqsa (2011), in his the previous study female faculty members experience more stress as compared to male faculty members. The reason behind females experiencing more stress is embedded in Pakistani cultural settings. In Pakistan, there is generally high pressure exerted on females to maintain balance between job & family demands, moreover, working in a male dominated society is another cause of experiencing more stress as compared to male faculty members.

Table-5: Chi- Square test result to find out the association between level of stress and Marital Status

Stress level	Marital Status		Total	Value	P-value
	married	single			
Medium	208	17	225	1.311	.252
High	147	18	165		
Total	355	35	390		

H₀: There is no association between level of stress and Marital Status.

Chi square test has been conducted to find out the association between level of stress and marital status of respondents. Here out of 355 married teachers 208 of them having medium level of stress and 147 are available with high level of stress. 35 respondents are single out of that 17 reported with medium level of stress and 18 of them reported high level of

stress. Totally 225 respondents having medium level stress, 165 respondents having high level stress. The chi-square result value is 1.311 and the significance value with 0.252 is that is $>$ than 0.05 so there is no association between the level of stress and marital status. Hence the null hypothesis is accepted. Also, no significant associations between the occupational stress of teachers and marital status are presented in this study, and this finding is in accord with results of Al-Qaryoti (2006)

Table-6: Chi- Square test result to find out the association between level of stress and Education

Stress level	UG	PG	professional degree		Value	P-value
Medium	0	26	199	225	1.334	.000
High	46	62	57	165		
Total	46	88	256	390		

H₀: There is no association between level of stress and Education.

The association between the level of stress and education of respondents has been find out by the chi-square test. From the table it inferred that all the 46 under graduate respondents having high level of stress. 26 post graduate respondents having medium level of stress and 62 post graduate respondents reports with high level of stress, out of 256 professional degree respondents 199 of them avail with medium level of stress and 57 of them having high level of stress. Totally 225 respondents having medium level stress, 165 respondents having high level stress. The results shows that all the under graduate respondents reports

about high level stress, and out of 88 post graduate respondents 62 reports high level stress, the chi-square value is 1.334 with the corresponding p-value 0.00 denotes that there is a statistical significance between the level of stress and education of respondents. Jaita (2011) By analyzing the role of education level on Job satisfaction and Job stress of the teachers, it was found that the teachers having postgraduate degree were having more job stress than the Undergraduate The teachers having postgraduate degree were having less Job satisfaction than the Undergraduate and Graduate teachers.

Table-7: Chi- Square test result to find out the association between level of stress and Family Type

Stress level	Family Type		Total	Value	P-value
	joint	nuclear			
Medium	43	182	225	48.407	.000
High	87	78	165		

To find out the relationship between the level of stress and family type the chi-square test has been carried out. 130 respondents are in joint family out of that 87 of them having high level stress and 43 of them having medium level stress. 260 Nuclear family respondents available and 78 of them reported with high level stress and 182 respondents having medium level stress. Totally 225 respondents having medium level stress, 165 respondents having high level stress. Chi –square value 48.407 and the p-value is 0.00 so

the results statistically significance with each other, hence the null hypothesis is rejected and the alternative hypothesis is accepted. A Study of Seema Pervez (2003) also supported this result that is in his study he fined out that there is significance difference for teachers from joint and nuclear family system, he indicates that teachers from joint families show high level of stress than teachers from nuclear families

Table-8: Chi- Square test result to find out the association between level of stress and Number of Family member.

Stress level	Number of Family member				Total	Value	P-value
	1	2-4	5-7	>7			
Medium	42	149	8	26	225	49.852	.000
High	19	69	33	44	165		
Total	61	218	41	70	390		

H₀: There is no association between level of stress and Number of Family member

The association between the level of stress and the number of family members has been find out by the use of chi-square test. 61 respondents are having only one family member out of them 42 avail medium level stress and 19 of them avail high level of stress, 218 respondents are having 2-4 persons in their family out of them 149 respondent having medium level of stress and 69 of them having high level of stress, 70 respondents having more than 7 members in their family out of them 44 avail high level of stress and 26 having medium level of stress. The results shows that respondents who are having more number of family members having high level of stress , in short the higher

the number of family members the higher the level of stress, Totally 225 respondents having medium level stress, 165 respondents having high level stress. Chi-square value is 49.852 with the respective p-value 0.00 so there is significance association between the level of stress and the number of family members. stress and teachers' job performance the model depicted the interaction of five variables i.e., school system, gender, job experience, number of family members, and number of students accounted more than 44 percent of the total variance in teacher stress.

Table-9: Chi- Square test result to find out the association between level of stress and Income

Stress level	Income			Total	Value	P-value
	15001 - 20000	20001- 25000	25000<			
Medium	17	8	200	225	20.249	.000
High	18	26	121	165		
Total	35	34	321	390		

H₀: There is no association between level of stress and Income

The association between the level of stress and the income of respondents has been find out by chi-square tests. From the table there are 35 respondents got 150001-20000 as their monthly salary, out of them 17 respondents got medium level of stress and 18 of them having high level of stress. There are 321 respondents got more than 25000 as their salary, out of them 200 having medium level of stress, and 121 of them having high level of stress. The results inferred that the lower the income of the respondents

lead to high level of stress that is more than 50 percent of the respondents in the income group 150001-20000 having high level of stress, Totally 225 respondents having medium level stress, 165 respondents having high level stress. Chi-square value in this research is 20.249, and the p-value is 0.00 so it is inferred that there is statistical significant association between the level of stress and income of the respondents, so the null hypothesis is rejected and the alternative hypothesis is accepted. Independent variables considered in the study, such as age, community, marital status, educational qualification, nature of the subjects the teachers teaching, salary received by the teachers and location of the school are significantly predicting the occupational stress of higher secondary teachers. The studies from Mariya (2012) shows there is no significant difference between monthly salary and occupational stress among school teachers. Teachers with higher monthly income are not necessarily having higher stress levels than their colleagues with lower monthly income, vice versa.

Table-10: Chi- Square test result to find out the association between level of stress and Spouse employment

Stress level	Spouse employment				Total	Value	P-value
	Unemployed	Government Staff	private Staff	Doing Own Business			
Medium	0	103	113	9	225	1.157	.000
High	22	74	19	50	165		
Total	22	177	132	59	390		

Chi-square test is used to find out the association between the level of stress and the spouse employment. From the results it is inferred that all the respondents (22) who are having unemployed spouse avail with high level of stress, and there are 59 respondents having business doing spouses out of them 50 got high level of stress and 9 of them having medium level of stress. Totally 225 respondents having medium level stress, 165 respondents having high level stress. The chi-square value for this table is 1.157 with respective 0.00 p-value it is inferred that there is a statistical significant association between the level of stress and spouse employment. Notably, Zhaoli Song (2011) model includes stressors common to both spouses and other stressors originating from employment and unemployment. Although the employed partners seem to be less distressed than their unemployed partners, the spouses' daily distress levels were associated positively, suggesting that the negative impact of job loss may extend to the working spouses. These findings lend strong support for investigating the family as an integrated system to understand the dynamics of unemployment.

7. FINDINGS & SUGGESTIONS

Out of 390 respondents, 225 have medium level of stress, 165 have high level of stress and no one has low level of stress.

There is significant association between level of stress and designation, years of experience, years of experience until retirement, age, gender, education, family type, number of family members, income and spouse employment.

It is suggested that effective measures to be taken by Schools management especially private Schools for creating a conducive environment in the schools so, that teachers do not have high level of Job Stress in order to promote effective teaching among to the students.

It is also, suggested that private school should provide parity to teachers in the regard to pay scale and other facilities being offered to government teachers.

It is also suggested that social security in terms of job be provided to teacher working in private schools as provide to govt. teachers.

It is also suggested that some recreational programmes be organized for stressing out the stress of teachers working schools in regular basis in order to promote positive mental health among teachers.

It is also suggested that there should not be too much of extra teaching

load on private school teachers and there should be sufficient number of teachers working in private schools with proper teacher's pupil ratio to avoid Job Stress.

CONCLUSION From the study it recognize that several causes of stress: unrealistic expectations, paperwork, and administration; however teachers feel that the rewards of student achievement outweigh the negative effects these causes have on them. Stress management techniques should be targeted at health education programming appropriate for school teachers. In order to provide suitable programs, it is important that researchers first understand the major causes of teacher stress. In addition, it is important to include follow up, long-term evaluation so that the impact can be maintained over an extended period of time.

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Table 2.1: Direction of Abnormal Returns (ARs) on Day 0 of Overall Sample

Direction	Number	%
Positive	29	43
Negative	38	57
Total	67	100

Source: CSE's C-D(2007)

Figures with the full papers should be formatted with same guidelines given for the table. The only difference is the position of the title which should be available at the bottom of the Figure. Do not use words “chart”, Graphs etc to highlight the figures. Please see figure 2.1 for example.

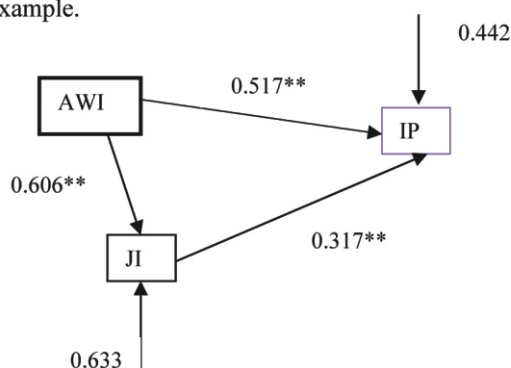


Figure 2.1: Path Model

Source: Developed by researcher

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