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Cultural Impact on e-Performance in Government Organizations in the United Arab Emirates.

Abdul Aziz Nasser Al-Raisi, PhD
Firend A.Rasheed, PhD

Abstract

This paper examines the influence of cultural forces in accepting the implementation of technology systems that deal with assessment and evaluation of government employees to facilitate the transitional process from manual to e-performance assessment in governmental organizations in the United Arab Emirates. The research methodology followed is descriptive and semi-structured interviews with government employees and line managers involved in e-performance and assessment. This study finds that scholars have long argued that cultural characteristics influence behavior directly. This phenomenon, however, varies from one culture to the other depending on numerous factors that shape work ethics and norms in the workplace. This study suggests that the United Arab Emirates enjoys highly structured governmental organizations. This primarily results from the naturally inherited characteristics of being a high-context society.

Key words: Cultural forces, e-performance management system, UAE

Introduction

The rapid technological changes, human capital assessment and evaluation, and available financial resources are shaping organizational development worldwide. Armstrong (2006) concur that maintaining highly skilled, well-performing workforces in a troubled global economy is a daunting task. Increased competition, new regulatory bodies, changing technology, and process management engineering could disrupt traditional employee practices and capability. The challenge for most organizations is that the use of technology to drive human performance is relatively new and not well understood (Cooper and Schindler, 2005). To meet such demands, organizations and businesses are relying on communications technology to monitor and improve employee performance and productivity (Frayne and Geringer, 2005).

Jarrar and Schiuma (2007) agree that e-performance helps to better manage organizational performance drift through efficient and cost-effective performance measurement techniques. Performance however is largely shaped by cultural characteristics, personality, values and norms (Hall, E.T. 1976, 1982). However, the core elements of performance management systems remains confined to a process that consists of managers and the people who manage the process. There are number of elements ranging from cultural to managerial that directly influence workers’ performance
in the twenty-first century. Incentives and rewards, for instance, must be aligned with business units and organizational objectives to achieve successful performance management systems. Since performance management is the primary method for evaluating workers, gaining first-hand understanding of the challenges facing the contemporary workforce is a primary concern for both managers and organizations.

Moreover, Various sectors of the UAE government found themselves in the position of mass hiring of fresh graduates to absorb them into the public sector (Randeree and Ninan, 2011). This, however, left the private sector in the UAE heavily dependent on expatriates, and kept UAE nationals distant from the efficiency and effectiveness of the private sector. This study sheds light on whether UAE nationals and non-UAE nationals are skilled enough to perform their duties effectively. Moreover, this study investigates the optimal utilization of e-performance management systems in governmental settings in the UAE, and how to apply such systems for adequate decision-making. It is important to mention, however, that optimal, not adequate, performance is one of the primary objectives of intergovernmental agencies in the UAE. This also puts more pressure on management and employees to improve performance and results.

Presently, the issue of employee effectiveness is a grey area within UAE-based governmental organizations. One of the primary objectives of higher management within the public sector is to intensify training for employees to improve effectiveness. Post-training performance, however, is difficult to measure without effective performance management systems. It is unclear whether managerial assessment is fair and accurate in measuring employees’ performance. It is also unclear whether the training provided was utilized properly by government employees to improve their performance and adequately measured. Cultural elements play a significant role in determining the relationship between number of variables such as effectiveness of training programs, employees’ commitment to improve their level of effectiveness, competency of management in the public sector to utilize employees’ full capacity, and effectiveness of current e-performance management systems in gauging employees’ performance. Performance however, is still for the most part influenced by cultural characteristics. This is especially true in the case of high-context society such as the UAE.

**Literature Review**

Little literature is available that examines cultural forces and government employee performance in the UAE. However, an extensive research has been conducted internationally on the interacting forces between culture and performance amongst government employees. Most notably Sharma (2005), Heery (1996), Chen, X., Tsui, A. (2006) and others in examining the relationship between performance, culture, and the causes and effects of performance in government sectors.

The closest literature available that examines e-performance assessment and culture is Norhayati and Siti-Nabiha (2009) work on government employees in Malaysia. Norhayati and Siti-Nabiha concur that government employees performance is highly shaped by cultural attributes within the Malaysia context.

Research of relevance to this paper is Panina and Aiello’s (2005) study, which acknowledges that national culture is a defining factor in the success of e-performance systems, and that this factor should be fully considered when designing and implementing any such performance management and assessment systems. Ramlall (2003) studied the effect of culture, e-performance management systems on governmental staff members in Greece, and found that while it did indeed improve employee performance, it also simultaneously caused negative behavior such as deception, as employees felt
very exposed and under pressure to perform due to the e-performance system which they seemed to be threatened by. This behavior according to Ramlall is purely cultural in nature and highly based on cultural norms and mores.

Omar (1992) compared people’s attitude towards computers in two different countries, the USA and Kuwait. While discovering that people’s attitude towards computers is positive in the USA, he suggested that people’s attitude in Kuwait and especially amongst women was a negative one. While no such study has been done on the UAE before, Kuwaiti culture is closest to the UAE in terms of population, structure, history, and social norms.

Lytras and Carroll (2008), Koumpis (2009), and Leidner and Kayworth (2008) further suggest that language is a key cultural characteristic that greatly shapes human attitudes towards interaction between performance and people. Choe (2007) and Myers and Tan (2005) emphasize in their research the relationship between national culture or users’ cultural characteristics, system’s ease of use, and performance.

Del Galdo (1996) suggested that the cultural environment shapes people’s attitudes and behavior. Such human behavioral differences are largely shaped by cultural attributes (Hofstede, 1980). A better understanding of these cultural elements that contributes to the acceptance and successful implementation of new technological systems will reduce resistance and ease the process of implementation.

Many researchers have argued that culture and cultural norms are the key factors in determining human interaction with one another and with technology (Hall, 1976; Hofstede, 1980, 1991; Luna et al., 2002; Trompenaars, 1993; Tsikriktsis, 2002; Singh et al., 2005). Hall (1976) further suggests that family, school, and religious institutions are the primary determinates in shaping behavioral patterns. Hall (1976) and Hofstede (1991) concur that determinates shaping cultural norms are set at early stages of human development and are difficult if not impossible to change.

Number of studies conducted by Straub et al. (2001), Loch et al. (2003), El Said and Hone (2005), and Nantel and Glaser (2006) also concur with Hofstede’s argument that cultural barriers prevent acceptance of new systems introduced to the workplace. Additionally, Trompenaars’ (1993) subjective examination of differences in solving problems amongst people of different cultures provides another platform for understanding culture as classified by Hall (1976) on the bases of universalistic vs. particularistic, neutral vs. emotional, individualism vs. collectivism, specific vs. diffused, and achievement vs. ascription as the foundation of significance. Trompenaars shares common ground with Hall’s (1976) and Hofstede’s (1980) description of culture dimensions, all of which emphasize the influence of culture and cultural characteristics in determining not only people’s actions but also their acceptance of new processes that might be considered as threat or an opportunity to the group.

**Methodology**

The methodology used in this research can be described as follows: first a qualitative approach that included open-ended interviews, and second; quantitative analysis that included questionnaire. A pilot study was conducted prior to data collection. The purpose of the pilot study was to reduce uncertainty in survey questions, increase clarity, enhance questionnaire validity, expand on factors that might affect data analysis, improve research design, and confirm the feasibility of this research study. The
quantitative research strategy adopted in this investigation arose from the nature of the study. This involves obtaining the views and opinions of the participants involved in UAE governmental organizations. Following the pilot study, interviews were conducted with 22 managers and front-line employees involving open-ended questions. All open-ended answers were examined thoroughly to become more familiar with the nature of the data. Then the data were categorized and classified according to themes. Each theme represented a major point of findings as a result of the interviews conducted with both employees and managers. Questionnaire was then distributed to managers and employees at various governmental departments.

The study is of empirical and field nature conducted on a chosen sample of UAE public sector governmental organizations. Among the various reasons behind this selection that:

- Accessibility to key personnel in all governmental organizations in the UAE
- These governmental organizations using e-government services representing an important sector to the present and future development of Dubai Emirate. The UAE Government is seeking to build one of most advanced and prosperous economic centre in the region. Recognizing this ambition, it can only be realized by grounding every effort on a solid scientific bases, the government encourages e-performance efforts that meet the prerequisites of such objective by adopting the latest technological standards. The geographic proximity of public organizations within Dubai is an important factor in conducting this study within the time constraint, and other requirements that facilitate the process of study's survey questionnaire, interviews, and relevant data collection.

The post-pilot study data collection involved an entirely different set of participants from those who participated in the pilot study.

Validity

The type of questionnaire used in this study could only be considered valid if it contains questions and possible responses that accurately represents the topic of study and is worded in clear, unambiguous language. This was validated through the pilot study stage.

Review of the literature, in particular Brudney and Brown (1990) helped to determine possible need areas. The pilot study further determined the validity of the instrument.

Analysis and Results

Data analysis was performed with both descriptive and inferential techniques. On the descriptive, summary tables, averages and average percentage were used. In order to establish casual relationships between variables, regression analysis was used. Though the level of measurement is not ratio (which is the basic requirement for the use of regression analysis) the Numerical scale was used as an approximate interval scale. Before starting data analysis, the replied questionnaires were edited to exclude extremely inconsistent and extremely incomplete ones. Each completed questionnaire was read through as it was received. Statistical Package for Social Science (SPSS) was the main tool used for analyzing the collected data for the study. Survey responses were tabulated regression analyses were deployed.
The reliability of the measurement instrument was assessed using Alpha Chronbach (α) for each of the six sections in the questionnaire. The split half technique was conducted using the Spearman-Brown formula, which yielded satisfactory results supporting the reliability of the different scales. All the reliability values obtained for the scales are compatible with those reported by Davis (1989) and Adams et al. (1992) study. The alpha coefficients range from 0.450 to 0.527. These coefficients provide evidence for reliability and internal consistency of the scales. The Guttman Coefficient ranges from 0.406 to 0.617.

Section I contained the general information of variables like age, gender, number of years of experience. Section I variables have Alpha (α) of 0.527, Guttman coefficient of 0.617 and the Spearman’s Brown coefficient of 0.618. The Section II has the Performance measurement variables like Electronic Performance result is used to improve employee skills, mentoring is used to improve employee skills, Each key position in the organization has electronic performance formats and Continuous personal development. Section II variables have Alpha (α) of 0.493, Guttman coefficient of 0.528 and the Spearman’s Brown coefficient of 0.429.

Section III has the performance assessment variables like performance appraisal is linked to overall goals and strategies, performance appraisal is used to identify the skill gaps, organization should rely only on external electronic PA centers and linking electronic performance to strategy. Section III variables have Alpha (α) of 0.481, Guttman coefficient of 0.406 and the Spearman’s Brown coefficient of 0.407.

It can be seen if the elements in the monotrait triangles within the MTMM matrices contain the highest correlation coefficients in their perspective columns, where a monotrait triangle is a sub matrix of intercorrelations between items intended to measure the same construct (Davis 1989).

Overall, the monotrait triangles in the MTMM Matrix show good convergent and discriminate properties. Items of the same scale are all highly and significantly (p< 0.01) correlated. The inter-item correlation coefficients ranged from 0.921 to 0.361. Items of the same scale are also correlated higher among each other than other items measuring different constructs. Only some variables like “Mentoring to improve employee skills” and “Electronic Performance results is used to empower employee” shows weaker inter-item correlations.

In the analysis of respondents’ answers data and testing study's hypotheses the following statistical techniques like Standard Deviation, Cronbach’s Alpha, variances are used. One of important measurements is to decide on the data homogeneity. This factor is mean of the mean. The standard deviation is a statistic that tells how tightly all the various examples are clustered around the mean in a set of data. When the examples are pretty tightly bunched together and the bell-shaped curve is steep, the standard deviation is small. When the values are spread apart and the bell curve is relatively flat, the standard deviation is relatively large.

The response frequencies of the items used in the questionnaire are listed in Table 1. Overall, respondents rated their support agreeing to the variables that voice the acceptance of e-performance solutions in UAE.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Median Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section I - Performance Measurement (PM) Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance result is used to improve employee skills | 3.48 | 1.06 | Completely Agree

Mentoring is used to improve employee skills and development and correction | 2.68 | 0.73 | Disagree

Each key position in the organisation has electronic performance formats on their system | 4.25 | 1.12 | Neutral

Continuous Personal Development of Employees | 3.73 | 0.69 | Agree

Providing performance feedback to employee | 4.28 | 1.63 | Agree

Employee performance and improvement | 3.64 | 1.45 | Slightly Agree

In the Performance Measurement Section, having electronic performance formats and providing the performance feedback to the employees were given more importance by the responders.

The maximum response from the employees is for providing performance feedback to employee, which has a mean of 4.28 and standard deviation of 1.63. Continuous Personal Development of Employees and Employee performance and improvement have also high response rates and support from the employees and employers in the UAE organisations.

The main area of improvement in the manual performance measurement section is in the use of “Mentoring to improve employee skills and development and correction.” The mean of the variable is only 2.68 and the standard deviation is 0.73. This response indicates that the UAE organisations do not use Mentoring technique to improve employee skills.

Table 1. Distribution frequency of E-performance study variable

The one-way analysis of variance (ANOVA) procedure produces a one-way analysis of variance for a quantitative dependant variable by a single factor (independent) variable. Analysis of variance is used to test the hypothesis that several means are equal. This technique is an extension of the two-sample t-test. In addition, trends can be used across categories (SPSS for windows, 1998)

One way ANOVA tests were conducted on the sample demographics, Section I of the questionnaire is to test for any mean variances caused by a non-hypothesized variable such as age, gender, education, level and so on. The results of the one-way ANOVA analyses, conducted with excluding cases list wise for missing values, is summarized in Table 5.6 below. The subjects’ characteristics variables including gender, age, UAE nationality, and job experience were all entered into the ANOVA analyses.
Using the aggregate mean in the analysis of variance is more accurate than using the total score, because the number of items used to measure each variable is different. Therefore a subject’s total score on a variable that has more items in its scale may be higher than another variable’s total score with fewer items in its scale. This might give the wrong impression that the subject’s self-reported evaluation of the first variable is higher than the second.

<table>
<thead>
<tr>
<th>Variables</th>
<th>PM</th>
<th>PA</th>
<th>EPS</th>
<th>EPM</th>
<th>EPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.687</td>
<td>0.278</td>
<td>0.026</td>
<td>0.162</td>
<td>0.278</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.800</td>
<td>0.570</td>
<td>0.267</td>
<td>0.592</td>
<td>0.479</td>
</tr>
<tr>
<td>Age</td>
<td>1.761</td>
<td>-0.640</td>
<td>1.678</td>
<td>1.402</td>
<td>1.397</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.077</td>
<td>0.08**</td>
<td>0.278</td>
<td>0.185</td>
<td>0.381</td>
</tr>
<tr>
<td>UAE National</td>
<td>0.825</td>
<td>0.705</td>
<td>0.008</td>
<td>0.679</td>
<td>0.372</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.273</td>
<td>0.254</td>
<td>0.185</td>
<td>0.140</td>
<td>0.192</td>
</tr>
<tr>
<td>Experience</td>
<td>3.856</td>
<td>2.484</td>
<td>3.027</td>
<td>2.531</td>
<td>1.742</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.008***</td>
<td>0.000***</td>
<td>0.000***</td>
</tr>
</tbody>
</table>

Table 2. Summary of Analysis of Variance (ANOVA) between subject characteristics and study variables

*** Strong significance  (p< 0.001)
**  Moderate significance  (p< 0.01)
*   Weak significance     (p<0.5)

The results of the ANOVA analyses summarized in Table 2 above indicate that experience and age has measurable variation of means between categories. Subjects high years of experience tend to bestow similar evaluation for e-performance variables of Performance Measurement (PM), Performance Assessment (PA), Electronic Performance Standards (EPS), Electronic Performance Measurement (EPM) and Electronic Performance Assessment (EPA).

Overall, the results of the ANOVA tests identify three no-hypothesized independent variables (factors) that affect the e-performance variables. The different categories for level of education, field of study and experience all caused significant variance of the mean of the dependent behavior intention variable. Because of the nature of the ANOVA analysis, these results cannot confirm predictor-predicted relationships between the exogenous variables and the study variables. Consequently, the researcher decided to include the exogenous subject characteristic variables in the regression model to test their significance as predictors of performance assessment, performance measurement, e-performance standards and e-performance measurement variables and e-performance assessment variables. The results of the different regression analyses are presented in the following sections.

**Regression Results**

The steps in performing a regression analysis are:
• Formulate the null hypothesis. The null hypothesis (H0) is therefore that "Y is independent of X, therefore the slope of the regression line is 0".
• Calculate the test statistics. A regression line is actually a running series of means of the expected value of Y for each value of X.

The P value is calculated from an F test. It is the probability that a statistical result as the one observed would occur if the null hypothesis were true. The F statistic is the ratio of the two mean squares. When the F value is larger and the significance level is smaller (smaller than 0.05 or 0.01), the null hypothesis can be rejected. That is to say, a small significance level indicates that the results probably are not due to random chance.

For the regression analyses to be accepted, we assumed that for each value of the independent variables, the distribution of the dependent variable is normal. The variance of the distribution of the dependent variable is constant for all values of the independent variables. The relationship between the dependent variable and each independent variable is linear and all observations are independent.

R² is the change in the R² statistics when the independent variable is entered into the model (stepwise)

<table>
<thead>
<tr>
<th>Dep. Vari.</th>
<th>R</th>
<th>R²</th>
<th>F</th>
<th>Sig. (p)</th>
<th>Ind. Vari.</th>
<th>ΔR²</th>
<th>Beta a</th>
<th>T</th>
<th>Sig. (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA</td>
<td>0.380</td>
<td>0.552</td>
<td>85.20</td>
<td>0.345</td>
<td>PM</td>
<td>0.283</td>
<td>0.302</td>
<td>2.10</td>
<td>0.04***</td>
</tr>
<tr>
<td></td>
<td>0.521</td>
<td>0.439</td>
<td>93.50</td>
<td>0.006</td>
<td>PA</td>
<td>0.328</td>
<td>0.485</td>
<td>1.73</td>
<td>0.00***</td>
</tr>
<tr>
<td></td>
<td>0.493</td>
<td>0.372</td>
<td>73.87</td>
<td>0.00*</td>
<td>EPS</td>
<td>0.465</td>
<td>0.290</td>
<td>3.40</td>
<td>0.025**</td>
</tr>
<tr>
<td></td>
<td>0.405</td>
<td>0.641</td>
<td>67.21</td>
<td>0.00**</td>
<td>EPM</td>
<td>0.380</td>
<td>0.537</td>
<td>2.69</td>
<td>0.00***</td>
</tr>
</tbody>
</table>

Table 7.7 Summary results of the Regression Tests using Electronic Performance Assessment (EPA) as Independent / predicted Variable

* βeta reported is the standardized regression coefficient
*** Strong significance (p< 0.001)
** Moderate significance (p< 0.01)
* Weak significance (p<0.5)

As shown above, Electronic Performance Assessment (EPA) has a strong significance with Electronic Performance Standards (EPS) having F=73.87 with p=0.00 and βeta =0.290 and Electronic Performance Measurement (EPM) having F=67.21 with p=0.00 and βeta =0.537. As evident from the analysis, the Electronic Performance Assessment is more related to Electronic Performance Standards and Electronic Performance Measurement.
Conclusion

The results of this research achieved by the data collected from the UAE governmental organizations. Results shows that there are number of elements ranges from cultural to managerial, directly influence workers performance depending on their organizational, cultural, and inter-personal behavioral characteristics. Incentives and rewards for instance must be aligned with business units and organizational objectives to achieve successful performance management systems. Since performance management is the primary method for evaluating workers, and gaining first hand understanding of challenges facing contemporary workforce is a primary concern for both managers and organizations.

Results of this study also shows that implication of performance management practices on employees are complex, largely because of the changing organizational cultures, structures, advancements in technological network systems that connects people in more ways than ever before, and because of the changing nature of skills required from modern employees. Furthermore, modern organizations are required to become far more agile than ever before. This adds to the complexity of modern workplace and capacity needed in modern employee. Managing expectation of both, the organization and the employee is a difficult task for modern managers. Performance management systems, particularly e-performance management systems are expected to close the gap in expectation between both, the organization and the worker. For instance, modern workers expected to be highly trained in whatever task they are expected to perform, possess highly specialized skills, and to perform multi-tasks as required by their employers with minimal retraining.

Furthermore, physically and developmentally Arab organizations are at a different stage of development to western counterparts and thus this slower adaption by Arab firms is likely to be the reason for the below target results. Thus, when considering the cultural and historical differences of the two regions, in fact despite being below average, the UAE organizations are in fact doing fairly well in relation to e-pms so far seeing as it is relatively new. However, as an alternative explanation for these results, there is no doubt that Arab culture it may also play a crucial role in the large-scale below target results. As according to Hofstede (1994) the Arab culture can be categorized as having a high dislike to risk, so they hate anything that puts them at risk. It may be the case that Arabs in general view the e-pms as risky, with the potential to create job insecurity, as it will reveal their real performance, and thus from the outset, Arab users may not be as enthusiastic about e-pms as western counterparts. This could also be likely as e-pms ultimate purpose is to monitor performance.

It is also interesting to note the disparity of satisfaction ratings for e-pms between private and public sector organizations, as it appears that public sector organizations are far more like to have above target satisfaction levels, while private sector had strong below target levels. This trend is best supported and explained by Al-Ali (2008), who states that in general UAE workers dislike the private sector and are dissatisfied with it as it is very money driven and is very ruthless in many aspects, while they prefer and are more satisfied with working in the public sector.

This represents a strong cultural belief of UAE governmental workers and is a belief that is well engrained. This study concurs to Rapaille (2007) argument that culture as the manifestations of human intellectual capacity, which reflects in human activities. This study further concurs to Kotter’s (2011) argument that all human activities are governed by set of values, which in turn forms human culture, as shown in the examination of cultural impact on performance in governmental organizations in the United Arab Emirates, and how cultural norms have an impact on performance.
This study further confirms findings of the literature review presented by Hofstede (1980); Lytras and Carroll (2008); Leidner and Kayworth (2008); Omar (1992); Koumpis (2009) that issues of technology adoption and use are sensitive to cultural characteristics. This study also confirms that cultural forces are highly relevant to the acceptance of electronic appraisal system at workplace. Finally, these factors are also influenced by the external environmental forces such as, regulatory, cultural, business and economics.

References


Cognitive Approach of Corporate Governance

A Visualization Test of Mental models with Cognitive Mapping Technique

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ABSTRACT

The idea of this paper is to determine the mental models of actors in the firm with respect to the cognitive approach of corporate governance. The use of the cognitive map to view these diagrams to show the ways of thinking and conceptualization of the cognitive approach. The paper takes a corporate governance perspective, discusses mental models. It takes also a cognitive mapping technique.

Key words: corporate governance, stakeholder model, cognitive mapping

Introduction

As shown Charreaux (2002), approaches a break with the paradigm contract can be grouped under the term "cognitive theories of the firm." According Charreaux, these theories include such current behavior (Simon, 1947, Cyert and March, 1963), evolutionary theory (Nelson and Winter, 1982), and the theory based on the resources and expertise. After briefly characterized the cognitive approach, our goal is to raise the contribution of this approach. Our goal is to identify the key concepts of the cognitive approach.

Literature review

L’approche cognitive de la gouvernance

Langlois and Foss (1999) indicate that the majority of studies related to contractual theories of the organization, focusing exclusively on the notion of information asymmetry and conflicts of interest it generates, does not offer an analysis the process of value creation. Interested only in the distribution of value, this work therefore obscure the productive dimension of building value by the company and do not give their place to levers such as competence, knowledge, the innovation and learning that appear to play an important role in research more competitive source of value creation in a sustainable manner. Cognitive theories focus particularly on creating internal knowledge from organizational learning.
The performance was more of the leader's ability to imagine, innovate, to receive new investment opportunities and act on their environment to change in its ability to restructure existing processes.

The firm is seen as a repository of knowledge, not only as a nexus of contracts. Value creation depends primarily of the identity and distinctive competencies of the latter, as well as its ability to create knowledge (Teece, Rumelt, Dosi and Winter, 1994). The cognitive approach attaches more importance to the contribution of intellectual capital in creating value. Thus, in the context of the cognitive approach to governance, the cognitive cost optimization is the main lever for value creation. Contrary to common contractual governance in the current cognitive, the problem is not that of aligning the interests of managers and providers of resources but of qualitative coordination, alignment and patterns of cognitive models anticipation: cognitive adjustments between the various stakeholders. Charreaux (2002) then defines corporate governance as the set of mechanisms to increase the potential for value creation through learning and innovation. According Poincelot and Wegmann (2004), a cognitive perspective, governance mechanisms must enable the management to inform on how to achieve the objectives assigned to it.

Control mechanisms leaders have therefore designed to ensure the sustainability of the organization. In this context, the board plays a cognitive role when considered as a place for exchanges and discussions in which qualified directors are able to influence the management skills of the manager and where the debate can lift some disagreement about the value of the strategy. Governance mechanisms must guide the leader and allow him to make decisions that create value through innovation and organizational learning.

This aspect of governance introducing some aspects associated with the internal characteristics of the firm as "information processor", which involves cognitive patterns of interpretation. He said the role of governance is a system for monitoring possible schemes for organizing the functions of allocation of information between the various participants in the organization.

This vision includes proactive governance including the behavioral theory of the firm based on the work of Simon (1947) and Cyert and March (1963), evolutionary theory, theory of organizational learning and theories of resources and skills.

In cognitive vision of governance, the role of the board goes beyond the interests of shareholders; it is a mechanism to ensure the best possible cooperation between managers and shareholders (Charreaux, 2000). It acts as a hierarchical body which, in addition to its role of arbiter in the rent sharing, should encourage teamwork. This representation allows the board to better understand the presence of directors as employees, bankers and suppliers. Thus, the inside directors can not only protect their specific investments, but also provide new information to enhance value creation. The role of the board is no longer limited to monitor managers to shareholders, it also acts to protect the set of relationships that create value, preserve and enhance the productive nature of the nexus of contracts, either by providing a shared fair and adequate incentive among different partners, by providing expertise (Charreaux, 2000). The company represents a system of stakeholders aiming to create value for stakeholders. The purpose of the governance mechanisms should be to maximize the global creation of wealth by the company.

The key concepts of the cognitive approach

Value creation: operating skills, knowledge and organizational learning
The common cognitive theory is that value creation comes from knowledge. The source of value creation is linked to elements difficult to imitate and which provide a significant competitive advantage and sustainable. The determinants of value creation as it is spoken in the cognitive theories are some of sociological and other psychological.

The behavioral theory (behaviorist theory) gives more prominence to the psychological dimensions of value creation. Achieving the desired performance requires knowledge of the behavior of actors or groups of actors in an organization. Two assumptions underlie this theory: the rationality of individuals is limited (Simon, 1947) and the organization consists of a coalition of actors with specific objectives which is a source of differences and potential conflicts.

Accordingly, a principle of maximizing the satisfaction replaces the traditional principle of maximizing value for shareholders. The decision process is interactive and emerging and the possibility of organizational learning.

The controls in this context are intended to ensure the sustainability of the organization. For this, the officer must complete a mission animation and mediation to help the players to coordinate. These devices must also inform the levels of contributions of different actors and so on payments possible, thus allowing a reduction of "organizational slack". To achieve these ends, the controller must measure and transmit signals external and internal, stable behavior and encourage self. Non-financial indicators (absenteeism, productivity indicator ...) learning about the behavior of each can increase the cement of the coalition.

In theories of organizational learning, competence creating value comes from the knowledge of organizational routines and especially for evolutionary theory (Nelson and Winter, 1982), knowledge of their developments. Routines are patterns of behaviors and interactions that individuals are able to use to deal with different situations that arise. The construction of these routines is the organizational learning (collective). They are usually tacit (neither codified nor transferable).

Nonaka and Takeuchi (1998) explain the creation of organizational knowledge and organizational learning to distinguish the dominant behavior (learning "how to" by observation, imitation, experience) and a predominantly cognitive ("the learning outcomes are a change in cognitive results in information processing and leads to increased knowledge or changes in patterns of interpretation."

The learning process will involve then the "know how" and "why"). An organizational learning process involves a comprehensive behavioral and cognitive change. The plurality of non-financial indicators and their high frequency including those focused on training, the rate of turnover may be justified in theory in order to create organizational learning. The participation of other stakeholders in the knowledge of employees is also important (opinions of customers on products, services ...). Note also that the creation of organizational knowledge is initially transferring tacit knowledge within a group, sharing of information. The nature of the information to be communicated is not dictated by the hierarchy but emerges from the communication between the groups (tacit knowledge is inherently difficult to transfer, the transfer will be primarily through dialogue and less formal way through indicators).

In evolutionary theory, the evolution of an organization due to relevant operating skills called secondary. Evolutionary theory can also be used to understand that non-financial indicators (such as other management practices, such as the ABC method) can be introduced and maintained or otherwise rapidly rejected by studying the existing organizational routines (Burns and Scapens, 2000).
Movement for Resources and Skills stems from the work of Ricardo (Arrègle, 1996) during which the concepts have been developed for pension and quasi-rents. The Ricardian rent is in the possession and use of a common strategic asset whose supply is limited and cannot be easily imitated or created. The quasi-rent is the specificity of an asset that may be worth more than a company as a competitor. These assets are difficult to imitate, difficult to substitute and exchangeable in a market. The MRC is part of broader evolutionary theories which postulate that the structural dimension of business performance is not their competitive position, but managing the evolution of their technical processes and their organizational processes.

The MRC leads therefore to refocus strategic thinking in the heart of the company in attempting to identify its scarce resources and more specifically human and organizational skills, that is to say its Intellectual Capital. The elements of Intellectual Capital are perceived as strategic resources chip, capable of giving companies a competitive advantage. MRC refers to a strategic interactionist mode of identifying the resources and skills, and to analyze the interaction between these resources and skills and environmental conditions.

Control modes of communication and exchange and training

In general, cognitive theories are based on emerging modes of control. These control modes are aiming to coordinate routines. It is also to promote the emergence of these secondary skills by providing detection devices and adequate analysis (concept of leading indicators) and facilitating organizational learning: promoting exchanges, communication and training. In addition to this overview, it is interesting to show that certain theories in organizational control, that is to say, theories of performance appraisal and pilot organizations, are part of the cognitive perspective. We present two approaches particularly significant. Uncertainty, the company must use other methods of control that the control of a disciplinary nature (checking that the results are up to the goals and behaviors are accordance with the requirements of managers). Modes of control refer to contractual paradigm, while the informal modes of control, through culture and self-refer to the cognitive paradigm.

Cognitive resources and growth opportunities

The emergence of a governance model extended to cognitive limitations of the model comes from the explanatory force (Rajan and Zingales 2000; Charreaux, 2002, 2002). This model seeks to explain the long-term success of firms and specifically why some firms are more profitable than others (Jensen and Meckling, 1976). In this traditional view of governance inherited from the seminal work of Berle and Means (1932), the value created is essentially the control over the executive. Indeed, shareholders owners delegate decision rights to their leader, they must ensure that it does not use them for its exclusive benefit or do not waste. It is therefore to limit the discretion of the officer via the internal (board of directors, audit committee, independent directors) and external mechanisms (financial market, labor market leaders, regulators). The value created from the effectiveness of the mechanisms in place. However, as noted Charreaux, (2002), it may happen that a leader who has achieved good financial results is still crowded. Taking the founding texts of current theories contractual, Charreaux (2002) shows that the source of the performance comes not only from the elimination of opportunistic behavior. In addition to the disciplinary aspects is the ability of management to organize production and to acquire knowledge that enables firms to be more productive. Financial resources are supplemented by cognitive resources involved in the strategic choices (Charreaux, 2002).

Shareholders, but also other creditors, provide financial and cognitive (Charreaux, 2000). The introduction of the cognitive dimension of governance emphasizes the concepts of knowledge and
learning and this in an evolutionary perspective in the sense of Nelson and Winter (1982). Knowledge is an interpretation of information by individuals. In this context, information is collected, processed and interpreted and there is a real organizational learning within the firm. This learning begins with the interactions between the board and the manager and can also develop inside the firm.

Organizational learning for; the acquisition of individual skills but also the development of collective skills, the subject of many schools of thought.

There are two main types of learning; The first concerns the exploitation of existing knowledge and skills (or internal resources), in the context of relatively stable systems, while the second develops the exploration of new opportunities (or resources) in a more complex and turbulent. In the first case, learning is oriented management experience and in the second case, it is experimenting with new internal processes or to challenge existing processes in a movement of regeneration.

In this context, the board helps the leader to develop or modify its vision (Charreaux 2002, Wirtz, 2006). The board becomes (or becomes) a real forum for discussion and is not simply "rubber stamp" to which he is sometimes compared. In fact, the skills of directors (or shareholders), their social networks become predictors of the value created by firms. The board can also be seen as a mechanism to harmonize existing cognitive schemas in the firm and in this context, the composition of the board plays an important role. In fact, it's more diverse board is decisive rather than independence (Charreaux, 2002). In this scheme, the entrenchment of the manager is not necessarily bad for the firm, it is even necessary to promote the construction of a shared vision and create value between the leader and the rest of the stakeholders. Cognitive conflicts must be able to speak is through them that new opportunities can be built, it is however desirable to alleviate the consequences, by consensus or by the game of corporate culture.

Governance and financial governance cognitive classic not opposed but complementary (Wirtz, 2006) and where appropriate, use existing skills or explore new opportunities, one or other of the dimensions that will be more relevant another. Under this analytical framework, it is no longer conflicts of interest must be reduced and "channeling" but the cognitive conflicts. The framework proposed moving away from a governance perspective to include strict discipline, in explaining firms' long-term, preservation and exploitation of internal resources but also the exploration of new resources.

**Cognitive levers: innovation, capabilities and specific skills**

Visions shareholder and partnership adopt a vision of legal and financial governance focuses on the levers disciplinary expected to provide the distribution that maximizes the value (that is to say that minimizes agency costs): the source of value creation created is purely disciplinary and linked to the minimization of conflict. If the disciplinary approach is still appropriate in the case of corporate managerial capital dispersed, recent studies highlight the restrictive nature particularly in the case of innovative firms (Charreaux, 2002; Wirtz, 2006). Value creation could not be reduced to a simple problem of discipline, but would also include a cognitive dimension, actually centered on the levers cognitive related to innovation and learning, which can create value. At the various strands of research in strategy, this approach highlights the central role of knowledge, skills and specific skills of the manager and his team (Kogut and Zander, 199). This knowledge is often tacit.

They contribute to both encourage innovation and strengthen competitive advantage and appear as real vectors of sustainable value creation (Wirtz, 2006). Cognitive theories are based on four common. The first is the current behavior (Simon, 1947) in which the firm is seen as a political coalition and a cognitive institution that adapts and learns (organizational learning).
The second is based on economic theory of evolution Neo-Schumpeterian (Nelson and Winter, 1982) which defines the firm as an entity comprised of activities in a coherent way, a repertoire of productive knowledge, a system of interpretation, which emphasizes the notion of competition based on innovation.

The third is based on the theories of the strategy based on the resources and skills ("resource based theory") that show the company as both a set of resources and an entity accumulation of knowledge guided by the vision of leaders due to their experience. As such, sustainable growth must be supported by the ability to learn and specificity of the stock of accumulated knowledge. The fourth is the power of organizational learning (Argyris and Schön, 1978) which emphasizes cognitive learning organizations.

The cognitive approach is novel in that it allows indigenizing the question of the origin of investment opportunities. Indeed, in the traditional view, the firm is interested few, if any, the source of investment opportunities. These opportunities are being "° available to policymakers °" in the image of a varied menu in which the leader would only have to choose "all possible activities for a company and their characteristics in value creation are given exogenously. Although the information on this subject is distributed asymmetrically, it exists, is "objective" and can in principle be obtained, although it sometimes involves a significant cost "(Wirtz, 2006). To illustrate this idea, Wirtz cites the example given by Jensen (1993) on overcapacity in the tire industry: the assessment of overcapacity due to the introduction of new technology, the radial tire, is objectively verifiable; the opportunities for value creation in this industry are given (just to learn).

In this context, discipline is exerted on the head to force him to make the best choice possible through a reduction in information asymmetry. On the contrary, the theories "cognitive" introduce the notion of knowledge and not just information. If the information is seen as a closed set, objective (that is to say, potentially accessible to all individuals) data on the impacts of possible events, knowledge is an open set, subjective, resulting from the interpretation information by individuals, according to their cognitive models.

The construction of a unique investment opportunity, for example through technological innovation depends not only information (ie information that could have built the way), but also knowledge specific (and tacit) of its designers.Contrary to information in principle transferable to third parties, knowledge, built as a mental or cognitive structure, is a subjective concept and depends largely on the specific trajectory of the holder (Fransman, 1994). Through the case of Air Liquide Group, Wirtz (2006) proposes an approach that integrates both the disciplinary and cognitive dimension by showing that the weight of these two levers depends on the stage of business development. It highlights the potential asymmetry of knowledge between an officer and shareholder in innovative companies. This is a source of conflict that are explained by the mutual incomprehension between the two parties, not just by a simple difference of interest. These conflicts lead costs, called cognitive costs (Charreaux, 2002, resulting from both dysfunctions caused by the mutual incomprehension of the various stakeholders and costs incurred to overcome the differences in the assessment of investment opportunities (in time and resources devoted to discussion, explanation, etc.). Wirtz (2006) appropriately distinguishes three kinds of cognitive costs: the costs of mentoring, generated for "standards to" the behavior of managers to the practices in the professional world of partners (such as a venture capitalist who helps a young shoot of high technology to comply with the purposes of financial reporting for capital ...), the costs of conviction, committed to understanding the intrinsic interest of a project and costs associated with residual cognitive misunderstanding on the part that remains.
Cognitive theory of governance: a different view of value creation

This theory rejects the assumption of calculative rationality in favor of a so-called procedural rationality. Rationality can be assessed more in terms of decisions, but the processes that govern them. In this theoretical approach to governance, value creation depends primarily identity and skills that are designed as a coherent whole (Teece et al, cited by Charreaux, 2002).

Similarly, the pattern of creation and ownership of the value that underlies it, is different from that underlying the disciplinary theories. In this approach, the organization is seen as a repository of knowledge able to perceive new opportunities, create value in a sustainable manner. The value comes from the emergence of all the opportunities. In addition, particular emphasis is given to the productive capacity both in terms of innovation for coordination.

In a cognitive perspective, Charreaux (2002) defines corporate governance as the set of mechanisms that have the potential to create value through learning and innovation. Each of these theories suggests different modes of value creation. If the first two theories have a more static value creation, the cognitive approach gives a dynamic view. These three theories give a different view of governance mechanisms and ultimately to implement.

Research Methodology

Methodological tools

I chose to approach the performances of the actors of the company by using a common technique in cognitive approaches, that of cognitive mapping. This is a graphical modeling technique of cognition used in numerous studies in management sciences.

The cognitive map is not the only tool for analyzing the managerial cognition, but it is the most popular for the presentation of cognitive structures.

Cognitive mapping is a technique now well established captures the minds of the players about a problem or situation. A cognitive map allows you to view certain ideas and beliefs of an individual on a complex area such as corporate governance. A cognitive map is usually defined as the graphical representation of a person's beliefs about a particular field.

A map is not a scientific model based on an objective reality, but a representation of a part of the world as seen by an individual.

Description of the empirical investigation

To meet the research objectives mentioned above, a survey was conducted among players in the company of Tunisia. I have chosen as exploratory approach using multiple case studies.

The multiple case studies seek a better understanding of the phenomenon. They are to study a phenomenon in its natural setting by working with a limited number of cases. They are particularly interesting in the case of exploration of little-known phenomena. The case studies thus allow multiple accounts the specificities and characteristics of corporate governance.
The data is from 10 firms. The decision to base my study on a sample of firms from various sectors is based on the assumption that a variety of issues will be addressed as well.

The output is a cognitive map for actors reflecting their perceptions vis-à-vis the stakeholder approach of corporate governance. The method used to create cognitive maps is the questionnaire.

**Presentation of the questionnaire**

The questionnaire is divided into two parts: the first identifies the company and the second deals with corporate governance. For the second part, relating to corporate governance, we interview actors from the firm on stakeholder approach of corporate governance by providing a list of concepts for each approach with systematic exploration grids and matrices cross. Systematic exploration of the grid is a technique for collecting materials.

Each player is encouraged to explore their own ideas or cognitive representations in relation to its strategic vision. The subject is asked to identify important factors that he said will have an impact on the key concept related to an approach to corporate governance.

![Grid systematic exploration](https://via.placeholder.com/150)

**Figure 1: Grid systematic exploration**

Regarding the cross-matrix, it is also a technique of data collection and the basis for the construction of the cognitive map. The matrix is presented in the form of a table with n rows and n columns. Box of index (i, j) indicates the relationship between concept i and concept j.

The actors manipulate the key concepts and assign pairs of concepts depending on the nature and degree of proximity sensed between these concepts.

**Table 1:**

<table>
<thead>
<tr>
<th></th>
<th>Concept 1</th>
<th>Concept 2</th>
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<th>Concept n</th>
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<tr>
<td>Concept 1</td>
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Proposal for modeling cognitive maps

When it is difficult to identify the goals, an integrated approach of performance provides a holistic view in which the performance is analyzed by the processes that lead, through the performances of the actors. These representation processes are two problems of implementation: the sharing of representations of actors and the identification of dominant representations in the organization in order to act upon them.

The construction of this representation necessarily requires a model that allows understanding to act is "an action of intentional design and construction, for composition of symbols, patterns that would make a complex phenomenon intelligible perceived.

In this context, the use of cognitive maps seems relevant, because they can take into account the complexity and comprehensiveness of the system in which [the behavior] is embedded, while maintaining access to the analysis" (Komocar, 1994). The value of the tool is instrumental (Audet, 1994), it allows both improving their actions and making sense.

Cognitive mapping is used as a tool for representation of an idiosyncratic schema (Cossette, 1994), a pattern is "a cognitive structure that guides the cutting of reality, the interpretation of events, and action individuals ", pattern unique to each individual, causing it to have its own behavior.

The construction of cognitive maps

We will see at first step that allowed the construction of concepts, methodological approach that we discuss. Then we will examine how the cards were dealt.

Concepts

We addressed this issue by the representations constructed by players using the method of cognitive maps, a method that can be applied to poorly structured situations. An analysis based on cognitive maps can understand this process of structuring, as this model is to build or rebuild the mental simultaneously modeling. This construction takes the form of a structure, carrier for clarification.

It helps to identify ways to implement to achieve a given goal, the same way it helps to identify the goals justifying the use of such means. Finally, it facilitates communication and negotiation.

There are two major trends in the construction method of the cards: the determination of the concepts can be ex ante, or subsequent interviews with respondents for whom the cards are built. Komocar (1994) links the question of determining nodes - or concepts - and links to two paradigms. In the phenomenological paradigm, the universe is largely unknown. The emphasis is on describing the world from the experiences of people who experience it.

Nodes and links are determined directly by the participants that advocate Cossette and Audet (1994), not to deprive the subject of representations: the questions should be invitations for the respondent verbalizes his thoughts on what he considers important subject of research (Cossette,
In addition, the researcher cannot force the subject to consider every possible link because the links must be made spontaneously or in response to open questions, so that the subject constructs its reality (Cossette and Audet, 1994). In the normative paradigm, the universe is more or less determined. The focus is on operational definitions and research plans reproducible. Observers, different participants, may determine the relationship between variables and nodes that can be.

Komocar proposes to take account of these two paradigms by adopting the following position: the nodes are determined a priori, and the links between these nodes are determined by the participants (Bougon et al. 1977; Komocar, 1994; Markoczy, 2001).

We selected 19 concepts for the partnership approach to their ability to describe the field of governance. We were guided in this by a literature review and an exploratory study based on a questionnaire made up of grids of systematic exploration and cross-matrices. The concepts presented in the table below.

**Table 2:**

<table>
<thead>
<tr>
<th>Key concepts for stakeholder approach</th>
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<tbody>
<tr>
<td>1. Knowledge (KN)</td>
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<tr>
<td>2. Creation of value (CV)</td>
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<tr>
<td>3. Competence (COMP)</td>
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<tr>
<td>4. Organizational learning (LORG)</td>
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<tr>
<td>5. Control (CON)</td>
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<tr>
<td>6. Communication (COMM)</td>
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<tr>
<td>7. Training (TR)</td>
</tr>
<tr>
<td>8. Cognitive resource (RES COG)</td>
</tr>
<tr>
<td>9. Growth opportunity (GR OPP)</td>
</tr>
<tr>
<td>10. Innovation (INN)</td>
</tr>
<tr>
<td>11. Specific capacitance (SP C)</td>
</tr>
<tr>
<td>12. Rationality (RAT)</td>
</tr>
<tr>
<td>13. Patterns of creation and ownership of the annuity (PCOA)</td>
</tr>
<tr>
<td>14. Repertoire of knowledge (REP KN)</td>
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</tbody>
</table>

**Materials and methods of structural analysis**

Analysis of the results led initially by a preliminary investigation of perceptions that are players in the Tunisian company vis-à-vis the stakeholder approach of governance.

This investigation was limited to the analysis of a collective cognitive map for all company, prepared on the basis of systematic exploration grids completed by the actors of the company.

From cognitive maps, we could identify and qualify the designs are the actors of the field of corporate governance.

The development and analysis of cognitive maps were made using the Mic-Mac software.
Our initial investigation focused on two elements: the relative importance of concepts and analysis of the dynamics of influence/dependence concepts (or variables) in the cognitive universe of players in the company. The relative importance of concepts was evaluated from the MIC. Mic-Mac program allowed us to rank the concepts in order to "balance" and "dependency." Thus arise the ideas that dominate in the cognitive universe of players.

*Overview of structural analysis method*

The main objective of structural analysis is to identify the most important variables in determining the evolution of the system. Inspired by graph theory, structural analysis is based on the description of a system using a matrix linking all its components. By weighting these relationships, the method highlights the key variables to changes in the system. As a tool, we opted for the software "Micmac" (cross-impact matrices, Multiplication Applied to Classification).

The first step of the method MICMAC is to identify all the variables characterizing the system under study (both external and internal variables). The second step involves the linking of variables in the construction of the matrix of direct influence and potential. Indeed, this approach is supported by the fact that in a systemic approach, a variable exists only through its network of relationships with other variables.

It is from this matrix what has identified the key variables. Indeed, we obtain the classification by the direct sum row and column. If the total connections line indicates the importance of the influence of a variable on the overall system (direct motor level), the total column shows the degree of dependence of one variable (level of direct dependence). The ranking against indirect detects hidden variables through a matrix multiplication program applied to indirect classification."This program allows us to study the distribution of impacts by the paths and feedback loops, and therefore to prioritize the variables in order of influence."

*Matrices and processing MICMAC method*

All structural analysis matrices above have been established only from direct relationships between variables. However, it is clear that a variable can also exert influence on other variables indirectly, or through another variable ("path" of order 2), or through several others exercising their influence cascaded through "paths" for longer and longer, and can also loop over themselves. The classification of motor skills may be significantly altered, and understanding the mechanisms of the system similarly.

Establish direct relations matrices indirect paths of length two, then three ... then N would quickly become intractable.

A relatively simple mathematical processing (multiplication of a matrix by itself, and elevation of the power matrices N) solves this problem. Benefiting from the spread of computers and personal computer, the method MICMAC (cross-impact matrix-multiplication applied to classification) is a commercial version. As expected, the rankings of variables by motor/decreasing influence (or dependence) generally find it changed. But experience has shown that these rankings become almost stable after three or four students to the power, and they are clearly the importance of some new variables in terms of their indirect influences.

Map and analyzed at the collective level, the map is the collective model of mental representations of several people on a research topic identified. In some cases, the cards are developed by collective aggregation of individual cards and in other cases they are developed directly by building a group card. In the first case, the card is called collective and composite map is constructed by
superimposing individual maps (M.G. Bougon & J.M. Komocar, 1994; M.G. Bougon, 1977; J.Ford & H. Hegarty, 1984). While in the second case, the cards are called strategic and more individuals come to gather to create a community card. It then seeks to map the shared perceptions of a group of individuals on a particular area.

**PRESENTATION OF VARIABLES**

**LIST OF VARIABLES**

Knowledge (KN)
Creation of value (CV)
Competence (COMP)
Organizational learning (LORG)
Control (CON)
Communication (COMM)
Training (TR)
Cognitive resource (RES COG)
Growth opportunity (GR OPP)
Innovation (INN)
Specific capacitance (SP C)
Rationality (RAT)
Patterns of creation and ownership of the annuity (PCOA)
Repertoire of knowledge (REP KN)

**THE INPUT**

This step was to compile a matrix of direct influence between these variables in a scoring session. Matrix of direct influence (MID) which describes the relationship of direct influence between the variables defining the system and the Matrix Influences MIDP represents the potential direct influences and dependencies between existing and potential variables. The scoring has developed the input matrix "matrix of direct influences (MID).

The influences are rated from 0 to 3, with the ability to report potential influences.

**Matrix of direct influences (MID)**

Matrix of direct influence (MID) describes the relationship of direct influences between the variables defining the system.

**Table 3**:

<table>
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<tr>
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<th>KN</th>
<th>CV</th>
<th>COMP</th>
<th>LORG</th>
<th>CON</th>
<th>COMM</th>
<th>TR</th>
<th>RESCOG</th>
<th>GR OPP</th>
<th>INN</th>
<th>SPC</th>
<th>RAT</th>
<th>PCOA</th>
<th>REPRN</th>
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<tbody>
<tr>
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<td>1</td>
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<tr>
<td>CV</td>
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7
The influences are rated from 0 to 3, with the ability to report potential influences:

0: No influence  1: Low  2: Average  3: Strong  P: Potential

**MATRIX OF DIRECT POTENTIAL INFLUENCES (MIDP)**

The Matrix Influences MIDP represents the potential direct influences and dependencies between existing and potential variables.

It complements the matrix MID also taking into account possible relationships in the future.

**Table 4:**
Matrix of potential direct influences

<table>
<thead>
<tr>
<th></th>
<th>KN</th>
<th>CV</th>
<th>COMP</th>
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<th>CON</th>
<th>COMM</th>
<th>TR</th>
<th>RES COG</th>
<th>GR OPP</th>
<th>INN</th>
<th>SPC</th>
<th>RAT</th>
<th>PCOA</th>
<th>REP KN</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
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<td>0</td>
<td></td>
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<tr>
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<td>0</td>
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<tr>
<td>COMM</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>RES COG</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>GR OPP</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

28
The influences are scored from 0 to 3:

0: No influence    1: Low    2: Average    3: Strong

5. RESULTS OF THE STUDY

DIRECT INFLUENCES

Characteristic of MID

This table shows the number of 0, 1, 2, 3,4 of the matrix and displays the filling ratio calculated as the ratio between the number of MID values different from 0 and the total number of elements of the matrix.

Table 5:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Size of matrix</th>
<th>Number of iterations</th>
<th>Number of zero</th>
<th>Number of one</th>
<th>Number of two</th>
<th>Number of three</th>
<th>Number of P</th>
<th>Total</th>
<th>Fill rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>14</td>
<td>2</td>
<td>149</td>
<td>19</td>
<td>14</td>
<td>10</td>
<td>4</td>
<td>47</td>
<td>23,97959%</td>
</tr>
</tbody>
</table>

Stability from MID

If it is shown that any matrix must converge to stability after a certain number of iterations (usually 4 or 5 for a matrix of size 30), it was interesting to monitor the stability during the successive multiplications.

In the absence of established criteria mathematically, it was chosen to rely on the number of permutations (bubble sort) necessary to classify each iteration, influence and dependence, all the variables of the matrix MID.

Table 6:

<table>
<thead>
<tr>
<th>Iteration</th>
<th>Influence</th>
<th>Dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>104%</td>
<td>105%</td>
</tr>
<tr>
<td>2</td>
<td>98%</td>
<td>105%</td>
</tr>
</tbody>
</table>
Sum of rows and columns of MID

This table is used to enter the sums in row and column of the matrix MID

Table 7:

Sum of rows and columns

<table>
<thead>
<tr>
<th>N°</th>
<th>VARIABLE</th>
<th>TOTAL OF ROWS</th>
<th>TOTAL OF COLUMNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Value creating</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Opportunity</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Contract node</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Specific investment</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Specific human capital</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Responsibility multiple</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Power</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Legetimacy</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>Profit</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Residual claim</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td>Annuity</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>Distribution</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>13</td>
<td>Conflict</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>Asymmetric information</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>77</td>
<td>77</td>
</tr>
</tbody>
</table>

Potential direct influences

Characteristics of MIDP

This table shows the number of 0, 1, 2, 3, and 4 and MIDP matrix displays the filling ratio calculated as the ratio between the number of MID values different from 0 and the total number of elements of the matrix.

Table 8:

Characteristic of MIDP

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of matrix</td>
<td>14</td>
</tr>
<tr>
<td>Number of iterations</td>
<td>2</td>
</tr>
<tr>
<td>Number of zero</td>
<td>149</td>
</tr>
<tr>
<td>Number of one</td>
<td>19</td>
</tr>
<tr>
<td>Number of two</td>
<td>14</td>
</tr>
<tr>
<td>Number of three</td>
<td>14</td>
</tr>
<tr>
<td>Number of P</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
</tr>
<tr>
<td>Fill rate</td>
<td>23,97959%</td>
</tr>
</tbody>
</table>

Stability from MIDP

If it is shown that any matrix must converge to stability after a certain number of iterations (usually 4 or 5 for a matrix of size 30), it was interesting to monitor the stability during the successive multiplications.
In the absence of established criteria mathematically, it was chosen to rely on the number of permutations (bubble sort) necessary to classify each iteration, influence and dependence, the set of variables.

**Table 9:**

**Stability from MIDP**

<table>
<thead>
<tr>
<th>Iteration</th>
<th>Influence</th>
<th>Dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>102 %</td>
<td>117 %</td>
</tr>
<tr>
<td>2</td>
<td>91 %</td>
<td>93 %</td>
</tr>
</tbody>
</table>

**Sum of rows and columns of MIDP**

This table is used to enter the sums in row and column of the matrix MIDP.

**Table 10:**

**Sum of rows and columns**

<table>
<thead>
<tr>
<th>N°</th>
<th>Variable</th>
<th>Total of rows</th>
<th>Total of columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Value creating</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>opportunity</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Contract node</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Specific investment</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Specific human capital</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>responsibility multiple</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>power</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>legitimacy</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>profit</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Residual claim</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td>annuity</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>distribution</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>13</td>
<td>conflict</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>Asymmetric information</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>77</td>
<td>77</td>
</tr>
</tbody>
</table>

**INDIRECT INFLUENCES**

**Matrix of indirect influences (MII)**

The matrix of indirect influences (MII) is the matrix of direct influences (MID) high power, by successive iterations. From this matrix, a new classification of variables highlights the most important variables of the system. Indeed, it reveals the hidden variables through a matrix multiplication program applied to indirect classification.

This program allows us to study the distribution of impacts by the paths and feedback loops, and therefore to prioritize the variables in order of influence, taking into account the number of paths and loops of length 1, 2, ..., n from each variable in order of length, taking into account the number of paths and loops of length 1, 2, ..., n arriving on each variable. The ranking is stable in general from an increase in the order 3, 4 or 5.

**Table 11:**
Matrix of indirect influences

<table>
<thead>
<tr>
<th></th>
<th>KN</th>
<th>CV</th>
<th>COMP</th>
<th>LORG</th>
<th>CON</th>
<th>COMM</th>
<th>TR</th>
<th>RESCOOG</th>
<th>GROPP</th>
<th>INN</th>
<th>SPC</th>
<th>RAT</th>
<th>PCOA</th>
<th>REPKN</th>
</tr>
</thead>
<tbody>
<tr>
<td>KN</td>
<td>24</td>
<td>27</td>
<td>22</td>
<td>25</td>
<td>6</td>
<td>0</td>
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<td>0</td>
<td>50</td>
<td>15</td>
<td>66</td>
<td>0</td>
<td>48</td>
</tr>
<tr>
<td>CV</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
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<td>3</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>6</td>
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<td>0</td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>L ORG</td>
<td>24</td>
<td>36</td>
<td>30</td>
<td>26</td>
<td>6</td>
<td>0</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>62</td>
<td>15</td>
<td>81</td>
<td>0</td>
<td>57</td>
</tr>
<tr>
<td>CON</td>
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<td>17</td>
<td>18</td>
<td>36</td>
<td>6</td>
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<td>0</td>
<td>18</td>
<td>27</td>
<td>21</td>
<td>0</td>
<td>34</td>
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<td>COMM</td>
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<td>15</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>18</td>
<td>0</td>
<td>38</td>
<td>5</td>
<td>48</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>TR</td>
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<td>10</td>
<td>6</td>
<td>3</td>
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<td>0</td>
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<td>3</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>RES COG</td>
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<td>18</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>6</td>
<td>18</td>
<td>9</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>GR OPP</td>
<td>4</td>
<td>9</td>
<td>8</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>12</td>
<td>0</td>
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<td>0</td>
<td>18</td>
</tr>
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<td>12</td>
<td>64</td>
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<td>0</td>
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</tr>
<tr>
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<td>0</td>
<td>8</td>
<td>15</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
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<td>12</td>
<td>41</td>
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<td>0</td>
<td>38</td>
</tr>
<tr>
<td>PCOA</td>
<td>30</td>
<td>17</td>
<td>8</td>
<td>24</td>
<td>6</td>
<td>0</td>
<td>14</td>
<td>12</td>
<td>15</td>
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<td>30</td>
<td>2</td>
<td>13</td>
<td>33</td>
<td>0</td>
<td>26</td>
</tr>
</tbody>
</table>

The values represent the rate of indirect influences

**Sum of rows and columns of MII**

This table is used to enter the sums in row and column of the matrix MII.

**Table 12:**

**Sum of rows and columns**

<table>
<thead>
<tr>
<th>N°</th>
<th>VARIABLE</th>
<th>TOTAL OF ROWS</th>
<th>TOTAL OF COLUMNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Value creating</td>
<td>303</td>
<td>335</td>
</tr>
<tr>
<td>2</td>
<td>opportunity</td>
<td>58</td>
<td>183</td>
</tr>
<tr>
<td>3</td>
<td>Contract node</td>
<td>0</td>
<td>164</td>
</tr>
<tr>
<td>4</td>
<td>Specific investment</td>
<td>359</td>
<td>322</td>
</tr>
<tr>
<td>5</td>
<td>Specific human capital</td>
<td>240</td>
<td>27</td>
</tr>
<tr>
<td>6</td>
<td>responsibility multiple</td>
<td>209</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>power</td>
<td>78</td>
<td>182</td>
</tr>
</tbody>
</table>
### Potential Indirect Influences

**Matrix of potential indirect influences (MIIP)**

The Matrix of Potential Indirect Influences (MIIP) is the matrix of direct influences Potential (MIDP) high power, by successive iterations.

From this matrix, a new classification of variables highlights the potentially most important variables of the system.

**Table 13:**

Matrix of potential indirect influences

<table>
<thead>
<tr>
<th></th>
<th>KN</th>
<th>CV</th>
<th>COMP</th>
<th>LORG</th>
<th>CON</th>
<th>COMM</th>
<th>TR</th>
<th>RESCOG</th>
<th>GROPP</th>
<th>INN</th>
<th>SPC</th>
<th>RAT</th>
<th>PCOA</th>
<th>REPKN</th>
</tr>
</thead>
<tbody>
<tr>
<td>KN</td>
<td>24</td>
<td>27</td>
<td>22</td>
<td>25</td>
<td>30</td>
<td>0</td>
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<td>0</td>
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<td>62</td>
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<td>84</td>
</tr>
<tr>
<td>CON</td>
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<td>36</td>
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<td>0</td>
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</tr>
<tr>
<td>COMM</td>
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<td>24</td>
<td>57</td>
<td>0</td>
<td>19</td>
<td>45</td>
<td>18</td>
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<td>18</td>
<td>3</td>
<td>0</td>
<td>12</td>
<td>18</td>
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The International Journal of Business and Management Research  Volume 5, Number I
The values represent the rate of indirect potential influences

**Sum of rows and columns of MIIP**

This table is used to enter are on the line and column of the matrix MIIP

**Table 14:**

**Sum of rows and columns**

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**Conclusion and implications of the research**

Concepts (or variables) structuring the cognitive world of the actors can be projected in terms of influence / dependence. The distribution of the point cloud variables in this plan, particularly in relation to different quadrants is to distinguish four categories of variables.

The first quadrant includes the most prominent concepts in the dynamics of thought of the actors. For the actors of that organization, the concepts of "control", "communication" and "patterns of creation and ownership of the annuity" are the most dominant in their cognitions reflecting an intention based on a logic that differs from the cognitive discipline of logic. Returning to the systematic exploration of grids for each actor, there is a balance of concepts expressing their orientation. For example an actor, these concepts are expressed through statements such as "competence," "productive capacity", "learning process». Thus reflecting an orientation to a productive logic.
The pattern of creation and appropriation of value underlying cognitive theories differ greatly from those underlying the disciplinary theories, in which the productive dimension is either ignored or reduced to aspects incentives (Langlois and Foss, 1999).

It leads in particular to a different cause of the existence of the firm that allows not only to distinguish the market but also of its competitors, that is to say of him define an identity. For example, to Foss (1996), firms exist because they can more efficiently coordinate collective learning process. For Dosi (1994), firms are sets of key competencies and complementary assets associated with these skills and boundaries of the firm must be understood not only in terms of transaction costs but also in terms of learning, path dependencies, technological opportunities, selection and complementarity of assets.

The central element is the emphasis on the productive capacity both in terms of innovation for coordination. Thus, the problem of coordination can be effectively made in defining the firm as a simple information system; the coordination is done only on how incentive. It should be reformulated with respect to a growth target based on the use of information, not knowledge but, it does not reduce the collection of information but including processing and interpretation. This reformulation also implies a more complex view of the firm as an open system and the abandonment of the concept of balance in favor of that process.

The efficiency depends not only on technology but also the motivation and skills of the workforce, organizational and managerial supervision, the latter two being based on the institutional structures and routines and cultural norms inherited the past.

The perceptual dimension of the entrepreneurial function related to the ability of management to think, perceive, build new opportunities also plays a key role, much more than the restructuring and reconfiguration of the business portfolios of firms in response to changes in the environment. The goal, remember, is to ensure sustainable value creation particularly through the construction of growth opportunities.

In summary, the firm as a processor or repository of knowledge based on the following uses of the cognitive argument: (1) the orientation of the activity according to the vision of leaders, (2) the creation of knowledge as a basis for innovation and all investment opportunities, this knowledge with tacit and social nature, which makes them difficult to imitate, (3) the protection of the knowledge base, (4) coordination of productive activity which involves the dimensions of the construction, operation and transfer of knowledge far beyond the mere transfer of information, (5) conflict resolution, which exceeds the only conflicts of interest to take a cognitive dimension.

This last point deserves special comment. A big difference from conflicts of interest and cognitive conflicts is that so it is interesting to minimize conflicts of interest, as this goal seems suboptimal for cognitive conflicts. Innovation, even simple adaptation, seems favored by the coexistence of conflicting cognitive schemas (Foss, 1996). In other words, the efficiency gains resulting from the reduction of cognitive conflicts can be more than offset by reducing the potential for innovation and adaptation. Here we find the traditional opposition between "exploitation" and "exploration" or between "static efficiency" and efficiency "dynamic" (Dosi, 1990).

The cognitive approach of the firm is to reconsider the role of governance. It must identify and implement cost-effective investments in a dynamic efficiency perspective. According to Demsetz (1969), to understand the influence of the institutional framework - so that the system of governance - on dynamic efficiency, we must remember three objectives: (1) the ability to encourage a wide variety of experiences (2) the ability to promote investment for potentially successful experiment and to reject
non-bearing investments such prospects, (3) the ability to use extensively the new knowledge generated.

The criticism to the financial vision of governance joins this approach: we need to expand this vision in order to consider the quality of the relationship between managers and investors and potential to increase the efficiency of the firm to identify and build opportunities for growth. In a broader perspective, the cognitive approach led to study the governance systems in terms of their influence on the different dimensions of cognitive processes of value creation.

The cognitive approach also leads to a reconsideration of the traditional financial approach to governance, in which the relationship between the firms with financial investors is limited to the provision of capital and the only objective is to secure investment financial discipline better leaders. Or, as suggested by various authors, finance also includes a cognitive dimension.

Thus, Aoki (2001) believes that in the model of governance associated with venture capital, it is not the venture capitalists ability to provide funding which is the most important factor, but that, on the basis of his knowledge and experience, on the one hand, to select the most promising projects, on the other hand, to deny financing (or refinancing) projects the least interesting, as soon as possible. Similarly, Charreaux (2002, 2002) offers an interpretation of the funding policy based on cognitive arguments explicitly involves the provision of expertise on the part of shareholders, including the industrial shareholders. Such developments argue for a reconstruction of the financial governance vision extended to the cognitive.

For the actor 2, this orientation is expressed in statements such as "information", "organization", "value creation", "schemas", "conflict", reflecting a logic-based cognitive understanding of ownership of the annuity. Visions cognitive focus primarily on the concepts of information and knowledge. From there, the organization is characterized by its ability to learn and generate knowledge: beyond the role of conflict resolution (contractual theories), the company produces knowledge that contributes to the process of value creation. The concepts of learning, building skills and innovation are central. The second quadrant contains the relay variables that are by definition both very influential and very dependent.

By analyzing the level of influence / dependence, there are players for the concepts or ideas illustrating the concepts of "organizational learning", "innovation", "Knowledge Directory", "rationality" and "knowledge". The ideas of the players in the Tunisian firms tend to focus on three basic concepts namely "property", "investment" and "value creation".

In this sense, the performance results from the creation of wealth that comes from making an investment that creates value. This achievement depends on the ability of each individual involved in the investment process to derive a satisfactory gain.

This concept of extended value to the various stakeholders has the interest to show that the creation of value not only the result of capital contributions by shareholders but the combined efforts of all partners. Different approaches to the creation of stakeholder value are possible. Charreaux and Desbrière (1998) Conference to provide a method for measuring stakeholder value creation, based on an overall measure of the rent created by the company in connection with the stakeholders and not just shareholders. According to these authors, the stakeholder value created is calculated as the difference between the sales price (or cost) opportunity and the sum of opportunity costs of the stakeholders. For our part, we proposed a model for creating full value of three modules: organizational value, economic value and social value. Organizational value is defined as the quality of management and operation of the company. It contributes to the creation of economic value and social value, which are interacting. This integral value is a possible approach to stakeholder value. The measurement method of creating...
organizational value that we have proposed is based on the socio-economic theory. The measurement of organizational value creation is the sustainable reduction of hidden costs (or gain value). Organizational value created can be used according to the strategy of company executives, creation of economic value and/or social value. The model of value creation and stakeholder value integral we have proposed is part of the problem of global and sustainable performance of the company.

The third quadrant contains the dependent variables or resulting. They are both influential and very little dependent, particularly sensitive. They are the results of which is explained by the variable motor and relay. Thus there are the strong dependence of a number of factors such as training variables, and value creation. The fourth quadrant contains the independent variables are simultaneously influential and little bit dependent. They are relatively excluded from the dynamics of thinking by the Tunisian company.

The plan review influences/dependencies shows the existence of a number of independent variables such as variables related to cognitive resources, opportunity for growth, specific capacity, etc..

Table 15:

Total of rows and columns

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<th>Total of columns</th>
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<td>Totaux</td>
<td>77</td>
<td>77</td>
</tr>
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</table>

Let \( W = W_l + W_c \) with \( W_l \): total weight of the variable influence, \( W_c \): total weight dependence.

Table 16:

Relative importance of variables

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Based on the study of the relative importance of concepts in cognition of Tunisian players in the company vis-à-vis the different approaches of corporate governance, it is possible to advance the following conclusions: Actors perceive the partnership approach of corporate governance at the level of concepts "organizational learning", "innovation" and "rationality." But the distribution of the point cloud variables, one can distinguish the first quadrant which includes the most prominent concepts in the dynamics of thought of the actors. For the actors of that organization, the concepts of "control", "communication" and "patterns of creation and ownership of the annuity" are the most dominant in their cognitions, reflecting a cognitive logic that differs from that of the disciplinary logic. The design they make the partnership approach is through different logics: one based on the valuation of a productive logic and one based on an understanding of the ownership of the annuity.

The central element is the emphasis on the productive capacity both in terms of innovation for coordination. Thus, the problem of coordination can be effectively made in defining the firm as a simple information system; the coordination is done only on how incentive. It should be reformulated with respect to a growth target based on the use of information, not knowledge but, it does not reduce the collection of information but including processing and interpretation. This reformulation also implies a more complex view of the firm as an open system and the abandonment of the concept of balance in favor of that process. the firm as a processor or repository of knowledge based on the following uses of the cognitive argument: (1) the orientation of the activity according to the vision of leaders, (2) the creation of knowledge as a basis for innovation and all investment opportunities, this knowledge with tacit and social nature, which makes them difficult to imitate, (3) the protection of the knowledge base, (4) coordination of productive activity that involves dimensions of the construction, operation and transfer of knowledge far beyond the mere transfer of information (5) conflict resolution, which exceeds the only conflicts of interest to take a cognitive dimension.

Visions cognitive focus primarily on the concepts of information and knowledge. From there, the organization is characterized by its ability to learn and generate knowledge: beyond the role of conflict resolution (contractual theories), the company produces knowledge that contributes to the process of value creation. The concepts of learning, building skills and innovation are central.
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New York.
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institutional framework."
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economics of the Business Firm - Seven Critical Commentaries. Traduction de J.C. Papillon,
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Examining Job Characteristics Model in an Oriental Culture

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Abstract
Survival in today’s competitive marketplace requires constant attentions to acquiring, motivating and satisfying professional employees, as they are the cornerstone of customer satisfaction and loyalty. The proliferation of educational institutions in all areas of learning has made the education and training sector of the economy profitable and highly competitive. The success of these centers of learning depends to a large extent on the knowledge, experience and professionalism of their teaching staff. This study examines the relationship between job characteristics model, satisfaction and internal motivation, using the moderating role of growth need strength on teachers of English Language Institutes in Mashhad, a large city in the northeast of Iran. A questionnaire was used to collect data from a sample of English language teachers working at English language Institutes. Statistical tests were performed on a total of 128 useable questionnaires. The findings suggest that critical psychological state variables have mediating role in personal/work outcomes (satisfaction, motivation) and core job dimensions relationships with the moderating role of growth need strength. While growth need strength has a direct impact on critical psychological states and core job dimensions, it has an opposite effect on personal/work outcomes and critical psychological states.

Keywords: General Satisfaction, Internal Motivation, Core Job Characteristics, Critical Psychological States, Growth Need Strength.

Introduction
In today’s hypercompetitive marketplace, organizations make relentless efforts to discover new ways to maximize their efficiency and performance. One of the key effects of globalization, technological progress and competitive forces in a knowledge economy has been to recognize the key roles that employees play in confronting challenges and improving organizational performance. Over the past half a century numerous scholars and practitioners have found a direct relationship between employee’s motivation and satisfaction level and performance (Herzberg, 1961, Vroom, 1963, McClelland, 1961, Porter an Lawler, 1969). Further, personal satisfaction is believed to be the basic requirements for employees’ desire to actively participate in organization activities, improve efficiency and make commitment to colleagues and organization. Another key research finding in organizational studies has been the role of job enrichment, i.e. expanding the scope of employees’ task and activities, on improved performance and employee’s motivation and satisfaction. The theoretical basis for job enrichment is essentially based on Hackman and Oldham job Characteristics Model (JCM hereinafter). This model, as suggested by Behson, (2010) is one of the most influential theories in the field of
organizational behavior and has been the main base of research studies since it was proposed in 1970’s. However, as Abu Elanain (2009) who investigated job characteristics in the Western environment acknowledged, since the previous studies about JCM was mainly in western countries, more empirical evidence to understand the importance of this model and its results in non-western countries is needed. This research aims to examine this theory framework in an oriental culture.

Study background
As the result of unprecedented increase in the number of public and private higher educational institutions in Iran over the last several years, it is now quite feasible that any person, young or old, male or female, high or low academic achiever with at least high school diploma, obtains a college degree. In addition, the new policy adopted by Iran’s Ministry of Science, Research and Technology to increase the number of postgraduates, particularly at doctorate level, has given hope to many recent graduates and working men and women that it is now possible to obtain a higher degree and hence improve their employability and career advancement. However, there is a catch in both cases: passing grueling entrance exams. One of the key subject matters in written phase of these exams and if passed, in interview phase, is English language. It is believed that an application with competency in English language has a clear edge to succeed in exams compared to less competent applicants. As the result of importance placed upon English language competencies, English language Centers or institutes have proliferated throughout the country, each with varying degree of quality and professionalism. It is clear that teachers of any educational institution, including language centers, play a key role in quality of services provided, learners’ satisfaction and organizational performance. Thus, to hire and keep the best teachers is crucial for the success of these educational establishments. To achieve this, management should know what motivates their teachers, how tasks should be organized and managed and what work conditions are motivating or de-motivating. It must be highlighted here that these teachers differ from school teachers and academics in that they are almost invariably part-time, low paid and are not protected by employment laws. The purpose of this study is to use job characteristics model and provides empirical evidence on key aspects of the relationship between model variables.

JCM
One significant approach to job design as a way to altering jobs to increase both the quality of employees’ work experience and their productivity (Daft, et al., 2009. p. 421). JCM was developed after the design of hundreds of jobs which can be used by individual managers or members of a team to improve employees’ motivation, performance, and job satisfaction, and to reduce absenteeism and job turnover. These studies also support the idea that the use of this model increases performance by meeting employees’ needs to grow and develop on the job. Although JCM is the most widely cited model in the work design literature, there is a number of branches of theoretical work that put this model under scrutiny. Early influential work that precedes the JCM includes Socio-technical Systems Theory, the Two Factor Theory, and the notion of job enrichment. The evidence has generally been consistent with a positive correlation between the core job characteristics and critical psychological states as predicted by the Hackman and Oldham model. JCM proposes the relationship between three classes of variables: core job dimensions, critical psychological states and personal and work outcomes. According to Lee-Ross (1998), JCM deals with “internal work motivation”, whereby the presence of certain job attributes motivates workers. In a research done by Moideenkutty and his colleagues (2006), it is explicitly stated that in some jobs, when employees are given more autonomy, job performance increases. However, as Morgeson and his colleagues (2006) found, several relevant aspects of the job characteristics related to job performance have not been well studied. Despite this, what is important is that the job characteristics are an important reference in determining job performance (Organ, et al., 2006).

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Core Job Dimensions
The core job dimensions include variety, identity, significance, autonomy and job feedback (Hackman & Oldham, 1980). However, there are two alternative specifications of the model, depending on whether or not significance is included. Significance was not initially present in Turner and Lawrence's (1965) seminal work on the model or in Hackman and Lawler's (1971) early formulation. More recently, however, significance has been included in Hackman and Oldham's work (1976, 1980). However, significance continues to be excluded by Stone and Porter (1975, 1979).

In this study, we have evaluated five dimensions suggested by Hackman and Oldham to determine a job’s motivational potential. The first dimension is skill variety which is defined as the number of diverse activities that compose a job and the number of skill used to perform it. The second is task identity which is the degree to which an employee performs a total job with a recognizable beginning and ending. The third is task significance, the degree to which the job is perceived as important and having impact on the organization or consumers. Autonomy is another aspect of core job dimensions and is the degree to which the worker has freedom, discretion, and self-determination in planning and carrying out tasks. Feedback is the last aspect of core job dimensions which is the extent to which doing the job provides information back to the employee about his or her performance. These variables will give an opportunity to enhance one’s activities in the core job dimensions. Expected effects on the workers are higher intrinsic motivation, better performance, greater work satisfaction, little absenteeism, and lower employees’ turnover (Johari, et al. 2009).

Critical Psychological State
Critical psychological states refer to the experienced meaningfulness of work, experienced responsibility for work outcomes, and the knowledge of work results. Boonzaier, Ficker and Rust (2001), like Hackman and Oldham, have considered experienced meaningfulness of the work, experienced responsibility for outcomes, and knowledge of the results as critical psychological states variables in their research. Likewise, Hackman and Lawler (1971) and Rungtusanatham and Anderson (1996) identified three ‘critical psychological states’ that a job should enhance, if it is to be internally motivating. They are the experienced meaningfulness of the work, the experienced responsibility for work outcomes, and the knowledge of results Tolman and Maiers (1991).

Meaningfulness of work is a degree, to which a person experiences work in general as meaningful, valuable, worthwhile (Salvendy, 2012). Employees need to have knowledge of the results of their work so as to feel good or unhappy about the results. They must feel responsible for these results believing that they personally are accountable for work outcomes. They do not perceive the quality of their work as dependent on factors external to their performance. Hackman and Oldham (1976) stated that these intervening variables are 'the causal core of the model'. Experienced meaningfulness of the work is enhanced primarily by skill variety, task identity and task significance. Experienced responsibility for work outcomes is linked to the presence of autonomy in a job, and knowledge of results is increased, when a job elicits a high level of job feedback, agent feedback and dealing with others. Thus, our first hypothesis is:

H1. There is a significant and positive relationship between core job dimensions and critical psychological states.
H1a. There is a significant and positive relationship among skill variety, task identity, job significance and the experienced meaningfulness of work.
H1b. There is a significant and positive relationship between autonomy and experienced responsibility.
H1c. There is a significant and positive relationship between Job feedback and knowledge of the results.

Personal Work/Outcomes
Personal Work/Outcomes refer to the personal, affective reactions or feelings a person obtains from performing a job which includes internal work motivation and general satisfaction. Internal work motivation refers to the degree to which the employee is self-motivated to perform effectively on the job and general satisfaction refers to the overall measure of the degree to which the employee is satisfied and happy with the job (Brown and Lent, 2005). (Hashemi et al. (2012) considered actors that affect job satisfaction including policies and procedures as related to the nature of reward and decision making, the core job dimensions and personal aspects such as self-knowledge and ability to deal with stress and general satisfaction. The impact of the five core job dimensions on the psychological state of experienced meaningfulness, responsibility, and knowledge of actual results leads to the high work motivation and performance and low absenteeism and turnover. Research carried out by Mohamed (2004) has shown that there is a positive meaningful relationship between core job dimensions and personal/work outcomes. Our next two hypotheses are:

H2. Psychological states have a mediating role between the core job dimensions and personal/work outcomes.

H3. In the presence of all three psychological states variables, personal/work outcomes maximize.

Growth-Need Strength

Growth-need strength (GNS hereinafter) is the extent to which a person needs personal growth and development. Positive outcomes are expected when people high in growth need strength are in jobs designed to be high in core job dimensions. However, low growth need strength individuals respond poorly to enriched job. GNS as a moderator influences the above relationships and is conceptualized as the propensity of someone responding favorably (or not) to undertaking jobs which are challenging and offer a chance to learn and grow. Other studies using Hackman and Oldham’s construct as a basis, report that additional variables such as work context (Ferris and Gilmore, 1984), work and locus of control (Lim and Tao, 1998), affinity for informal group formation (Lee-Ross, 1999) are also important moderators (Darren Lee-Ross, 2005). In addition, other investigations have sought alternative moderator variables with mixed results. Such variables included: (a) the finding of Turner and Lawrence (1965) that location of work place (city vs. town) moderated job characteristic satisfaction relationships (positive in towns, negative in cities), (b) Hulin and Blood's (1968) notions of alienation from middle class norms, (c) Robey's (1974) experiment using intrinsic and extrinsic values with a moderating effect, (d) Stone's (1976) use of the Protestant Work Ethic Scale in which no moderator effect was found, (e) Wanous' (1974) comparison of the city/town, Protestant Work Ethic, and growth need strength variables in which he found the strongest moderating effect for the latter Variable and (f) Steers and Spencer's (1977) use of a measure of need for achievement (Steers and Braunstein, 1976) in which some moderator effects were uncovered. Thus our last two hypotheses are:

H4. GNS has a moderating role in the relationship between the core job dimensions and critical psychological states.

H4a. GNS has a moderating role in the relationship between skill variety, task identity, task significance and meaningfulness of work.

H4b. GNS has a moderating role in the relationship between autonomy and experienced responsibility.

H4c. GNS has a moderating role in the relationship between feedback and knowledge of results.

H5. GNS has a moderating role in the relationship between critical psychological states and personal/work outcomes.

Figure 1 shows the research conceptual model, as suggested by Hackman and Oldham (1980)
Methodology

The main purpose of the research is to investigate the relationship between job characteristics model, satisfaction and internal motivation, using the moderating role of growth need strength on teachers of English Language Institutes in Mashhad. To assess and evaluate the relationship between job characteristics model, satisfaction and internal motivation teachers of English Language Institutes in Mashhad, a large city in the northeast of Iran, were chosen. Data for the research were collected through a questionnaire adopted by Lawrence (2001). We verified its validity using confirmatory factor analysis and reliability in a pilot study (α = 0.7). In order to estimate the sample size, a prototype of the target population i.e. English language teachers working in language centers, including 30 teachers completed the questionnaire. The Cochran formula using the standard deviation obtained from the responses (0.25) yielded 128 as the research sample size. A total 150 questionnaires was distributed among the target population of which 128 useable questionnaires were used for further analysis. During the actual study, the questionnaires were distributed at various English Institute in Mashhad. Various tests were performed to analyze the data.

Findings

Descriptive statistics revealed that on average the respondents’ age were 27.3 with the work experience of 5.1 years, suggesting that relatively young and less experienced teachers work in the language institutes. Further, two-third of respondents had a bachelor degree and the other one-third had completed a master degree, which highlights the fact that well-educated employees are attracted to the sector.

To assess the significant relationship between the variables, Chi-square tests were performed as shown in Table 1.

<table>
<thead>
<tr>
<th>Relationship/results</th>
<th>Alpha</th>
<th>Sig.</th>
<th>Test</th>
</tr>
</thead>
</table>

Table 1: Summary Results of Chi-square tests
As table 1 indicates, there is a significant relationship between core job dimensions and critical psychological states and between psychological states and personal/work outcomes. The intensity of the relationship between psychological states and personal/work outcomes was assessed by Gamma statistics. Further analysis of data revealed that the relationship between these two variables is extremely high in intensity at about 0.891. Therefore, the most important findings of research is that at the presence of all three psychological states variables, the personal/work outcomes maximizes.

To examine the mediating role of psychological states between core job dimensions and personal/work outcomes, linear regression of critical psychological states was fitted to core job dimensions, the fixed value and SD were 3.57 and 0.235 respectively. Then the linear regression of personal/work outcomes was fitted to that of critical psychological states and core job dimensions, and values for critical psychological states, using the Sobel test, was 0.45 with standard deviation of 0.08. These findings uphold the mediating role of psychological states in the model. Moreover, to examine the moderating role of growth need strength variable in the model, the relationship between the two variables have been calculated with and without the presence of moderating variable, using a Gamma test. Again, as shown in Table 2, the moderating role of GNS is confirmed.

The results from the analysis are presented in Table 2; the significant difference of Gamma Test with and without the presence of moderating variable is given so that the least difference in the table is that of core job dimensions. The value of critical psychological states in the presence and absence of growth need strength is about 0.175, Which has a direct influence on the model, it means with the presence of growth need variable the relationship between the variables are stronger. On the other hand, the greatest difference in the table 2 was that of autonomy and meaningfulness of work at about 0.673 which has a direct influence, indicating the strong moderating role of growth need strength. Interestingly, the moderating role of growth need strength was negative between critical psychological states and personal/work outcomes at about -0.266. Finally we can conclude that the moderating role of growth need strength has been confirmed. In fact, those teachers with a high core job dimensions of variety, identity and significance, have a higher growth need strength and higher satisfaction and...
higher internal motivation respectively. Nevertheless, those teachers with higher critical psychological states and higher growth need strength have a lower satisfaction and lower internal motivation.

**Discussion and Conclusion**

This study set out to assess the relationship between core job dimensions, critical psychological states and growth need strength with satisfaction and internal motivation among Mashhad English institutes’ teachers. The findings of this study suggest that there is a positive and significant relationship between core job dimensions and critical psychological states which confirm the results of other research such as Lee-Ross, 1998; Boonzaier et al., 2001; Liye, 2009. Further, this study corroborates the earlier findings of Lee-Ross (2005), Walsh and Taber (1980), and Wall et.al, (1978) about the significant relationship between psychological states variables. The moderating role of GNS in the model was in line with the findings of Evans et.al (1979), Streat and Braman (2000) and Rungtusana and Anderson (1996). The analysis also shows that GNS has an indirect role between critical psychological states and personal/work outcomes. In case of high critical psychological states among teachers with high growth need strength, satisfaction and internal motivation will be low, which is incompatible with other researches findings. Teachers with high responsibility in their job and high growth need strength have lower internal motivation perhaps because we are dealing with very young (average age 27.3), inexperienced (average experience year 5.1) teachers. As these findings are derived from a specific organizational context, it is difficult to generalize it to other contexts, thus needs further investigations. Furthermore, these findings support the idea raised in other research that teachers with high task variety, identity and significance with high growth need strength feel higher responsibility towards their job compare to those who have lower growth need strength. In fact, it is noteworthy that based on the findings of this study, growth need strength has a considerable influence on the severity and weakness of the relationships of task variety, identity, and significance with meaningfulness of the work. Therefore, we can increase the meaningfulness of the work among teachers by enhancing this factor through understanding the individual characteristics of teachers and recognizing each teachers’ challenge tolerance by evaluating the level in which they respond positively to a challenging task which in turns leads to higher satisfaction and higher internal motivation. Likewise if growth need strength accompanies with experienced responsibility for work outcomes, teachers’ satisfaction and internal motivation will decrease.

This study is subject to common restrictions. While limiting the statistical sample to a specific organization could give profound data, generalizing the results will be troublesome. Further, this study has been restricted to teachers of a specific major (English) of a specific educational environment of a specific city so different characteristics of other environments have not been included. Finally, despite much theoretical evidence in support of H5 hypothesis – the moderating role of growth need strength– its indirect relationship has been proven in this study due to transient conditions of the learning environment. Thus, further research is needed to re-examine the moderating role of growth need strength in the model in other research settings.

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Measuring the Impact of Certain Hedonic, Rational, and Influential Components on Consumers’ Intention to Adopt Innovative Fast Moving Consumer Goods (FMCG) in Egypt

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Abstract
The aim of this paper is to measure the impact of certain hedonic, rational, and influential components on consumers’ intention to adopt innovative fast moving consumer goods (FMCG – food and beverages) in Egypt. This study was considered conclusive research, with a cross-sectional design and a descriptive purpose. Each of the variables was measured using a 5-point Likert scale (the number of the items varied in each scale). Out of 900 self-administered questionnaires, 475 were returned complete and accurate, yielding a response rate of 52%. Findings indicated that all the independent variables had a positive and statistically significant relationship with attitude formation and adoption intention. The relationship with the variable of personal innovativeness traits varied depending on the FMCG. The second major finding is that the effect of the variables changed depending on the product. The variables varied in their statistical significance and their contribution to the prediction of attitude formation and adoption intention. Due to these results, this study has implications for both researchers and practitioners concerning the factors affecting consumers’ decisions to purchase innovative FMCG.

Keywords: Adoption, FMCG, Hedonic Factors, Innovation, Rational Factors

Introduction
Contemporary organizations operate in a challenging market. They face huge pressure from increased competition, rapidly changing market requirements, advancements in technology, and shorter
product life-cycle (McGrath et al., 1992). For this reason, the concept of innovation (ideas, practices, or objects perceived as new by individuals) is critical for sustainability in the complex and cluttered marketing environment (Rogers, 2003). Innovation is an important source of vitality, differentiation, and value-adding opportunity for businesses to develop new products (Michaut, 2004). It allows the industry to gain a competitive advantage, attract new customers, and retain existing customers (Kotler & Keller, 2006). Innovation is thus crucial for FMCG (fast moving consumer goods) industries.

The FMCG industry in Egypt has grown over the past ten years due to the expansion of international chains, the availability of product variety, the rise in level of income, and the increase in brand advertising. Innovation in connection with the specific regarding FMCG of foods and beverages will be the focus of this study. This industry has become one of the key economic sectors in Egypt that continues to benefit from high levels of investment and development. In 2009, the consumer retail sector grew in size and in sales due to the high population growth rate (2% growth rate), the boost in imports (total food and agriculture imports in 2008 were $10.9 billion), and the presence of new international and domestic retail stores (Mansour, 2009).

There are a variety of innovative foods and beverages in the Egyptian market (Mansour, 2009). However, this research will focus on three new FMCG products that reflect the characteristics of incremental innovations. The randomly selected products are instant soup with various new flavors, drinkable yogurt, and 3-in-1 packets of hot drinks (coffee, tea, and chocolate). Different FMCG were chosen in order to reflect a range of novel ideas to consumers, since innovation is a subjective assessment of “newness” (Sandy, 2002). This study will use these products to measure the impact of certain hedonic, rational, and influential components on attitude that lead to consumers’ intention to adopt innovative FMCG.

Theoretical Framework

In the global environment, product innovation is becoming crucial in dealing with severe international competition and demanding markets (Wheelwright & Clark, 1992). Fundamentally, product novelty reflects the improvement of technical specifications, substances, components, user friendliness, and other functional traits of the product (OECD, 2005). Hence, companies using innovation are in a better position to create a stable competitive advantage for themselves (Prahalad & Hamel, 1990).

Not all innovations are the same. They can be classified into different groups according to their characteristics and the level of newness. Many such groupings have been proposed; the two at the extremes of the spectrum are radical innovation and incremental innovation (Garcia & Calantone, 2002). Radical innovation refers to a new technology which results in a new market formation (Song & Montoya-Weiss, 1998). This newness creates a dramatic change that transforms existing markets to create new ones (Leifer et al., 2000). Conversely, incremental innovation involves the adoption, refinement, and improvement of existing products, production, or delivery systems (Song & Montoya-Weiss, 1998). Rothwell and Gardiner (1988) consider that borrowed technologies are also an incremental innovation, since the technology of one industry may be new to a different market. This research will focus on incremental innovation in FMCG.
FMCG are also called “consumer packaged goods.” The term refers mainly to low-priced items that are consumed regularly (Baron, Davis, & Swindley, 1991). They include non durable end-user products such as toiletries, cosmetics, household cleaning products, glassware, light bulbs, and batteries. Certain pharmaceuticals and packaged food products and drinks are also considered FMCG. Because these goods are commodities, they are easy for another company to replicate. The industry thus faces the difficult task of developing a competitive advantage based on differentiation or low-cost strategies. Therefore, companies constantly need to ensure that their innovations are distinctive in order to remain ahead of competitors (Kunc, 2005).

Innovation related to FMCG, especially in the food and beverage industry, is based on product extensions and development of the same product lines (incremental innovation). The goal is to improve the standards of existing products under current market conditions. The focus is on the product, rather than on consumer behavior. Innovative FMCG are goods that do not require any changes in consumer behavior because they are already accepted by consumers: new features can be offered without disrupting customary behavior patterns; the product will have the same function and purpose as usual; and finally innovation will tend to have low risks (Zairi, 1995). These factors define novelty in FMCG and help explain their adoption process and consumer acceptance.

There are many theoretical models for innovation acceptance and adoption. Each of them had different targets and was tested on different contexts and products at individual, organization, and societal levels (Davis et al., 1989; Compeau & Higgins, 1995). In the current research, the proposed conceptual framework integrates three main models of innovation acceptance and adoption: Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM).

In the Theory of Reasoned Action (TRA), a person’s actual performance is determined by his intention to act. This intention is influenced by attitude, subjective norms, and various beliefs. The feelings toward a behavior are determined by the perceived consequences of that action and an evaluation of the desirability of the consequences. The model assumes that consumers’ beliefs (hedonic and rational) and their subjective norms (the opinions of the people who are important to him) help to form attitude, which directly affects behavior intention. This theory is a systematic and applied approach to attitude and behavior research (Fishbein & Ajzen, 1975).

The Theory of Planned Behavior (TPB) model is an extension of the TRA, developed by Ajzen (1991). This theory adds perceived behavioral control to the model. Perceived behavioral control is the availability of cognitive and situational resources that are needed to carry out the act. According to this theory, an individual’s actual behavior is determined directly by behavioral intention and perceived behavioral control (Sheppard, Hartwick, & Warshaw, 1988). Therefore a person’s attitude, subjective norms, and perceived behavioral control form the intention. The model also includes factors such as relative advantage, compatibility, influence of significant others, and risk. These factors were derived from a variety of innovation diffusion literatures (Ajzen, 1991).
The Technology Acceptance Model (TAM) is also based on the TRA (Davis, 1989). It suggests that perceived usefulness and ease of use are helpful in explaining the intentions of using a product. Perceived usefulness is the idea that using the product will enhance the user’s performance in some way. Perceived ease of use is the idea that using the product will be free of effort (Dholakia & Dholakia, 2004). These two beliefs can be generalized across different settings and products. The assumptions of this model have received extensive empirical support (Venkatesh & Morris, 2000). A number of modified TAM models have also been created (Chau & Hu, 2001). Further research has included extra features and variables, such as perceived enjoyment and prestige (Moore & Benbasat, 1991; Pedersen, 2005), personal innovativeness traits (Gatignon & Robertson, 1985), and a variety of innovation characters (Rogers, 1995).

The model proposed for the current research is made up of three categories of antecedents (independent variables) that influence consumers’ attitudes, leading to the intention to adopt. The first category is the hedonic components, which include the consumer’s perceived enjoyment and prestige. These two variables are borrowed from the Technological Acceptance and Usage Model, an extended model of the TAM (Davis, 1986). The second category is the rational components. This component focuses on the product’s perceived ease of use, usefulness, and importance. These factors are also taken from the Technological Acceptance and Usage Model. The final category, the influential components, refer to consumers’ social influences, as described in the Individual Innovation Acceptance Model (Olshavsky & Spreng, 1996), and their personal innovative traits, as described in the Adoption and Diffusion Process Model (Gatignon & Robertson, 1985).

Consumers’ behaviors and decisions are influenced by attitude. Attitude reveals the person’s level of interest in a product after conducting rational and emotional evaluations (Voss, Spangenberg, & Grohmann, 2003). It is developed through a sequence of mental stages that reflects the beliefs held by the individual (Rosenberg, 1956). According to Lavidge and Steiner (1961), the perceived hedonic and rational factors are assessed to generate an attitude toward a certain product. Once an attitude is formed, behavior will change in terms of intention to act or actual action.

Intentions to adopt novelty can vary among individuals and can carry different meanings for each person. For some consumers, the purchase of new goods can hold personal and social meanings (Featherstone, 1991). For others, the consumption of innovations can emphasize or reflect their identity, morals, and norms, or help them relate to their social networks (Miller, 1987). Consumers may adopt new products on the basis of the need for assimilation or differentiation, depending on their need to be similar to or distinct from other people (Timmer & Katz-Naunon, 2008). Figure 1 illustrates the proposed research model. It shows and explains the stages of the adoption process of innovative FMCG.

Figure 1. The proposed research model
Background and Hypotheses Development

The hypotheses in this study concern the relationships between the variables in the proposed model. Prestige was the first factor to be hypothesized. Consumers may believe that a new product can develop and enhance their image in society (Al-Gahtani & King, 1999). The desire to gain social status may be one of the most important motivations for individuals. Prestige has a positive contribution to attitude (Lee, Kozar, & Larsen, 2003). For these reasons, the initial hypothesis was: Perceived prestige will positively influence consumers’ attitude, which will lead them to the intention to adopt the innovative FMCG.

Perceived enjoyment plays an essential role in innovation acceptance. Individuals will use a product if it provides fun, delight, and satisfaction. The TAM extension examined the impact of enjoyment on usage intent and reported that enjoyment had a vital effect on intention (Davis et al., 1989). Several empirical studies have validated this relationship for a wide range of products (Holak &
Lehman, 1996; Rogers, 1995). Therefore, the second hypothesis was: Perceived enjoyment will positively influence consumers’ attitude, which will lead to the intention to adopt innovative FMCG.

Perceived usefulness and perceived ease of use have been found to be crucial in the acceptance of innovation. The TAM and TRA identified the relationships among perceived usefulness, attitudes, and intentions towards a product (Davis et al., 1989). Research suggests that if a product does not help people perform better, it will not appeal to them. This variable has been found to have a strong direct effect on an adopter’s intent to use the innovation (Davis, 1989; Adams, Nelson, & Todd, 1992). Similarly, perceived ease of use has been confirmed as an important antecedent of adoption intention. The idea that a product is simple and requires less effort to use will lead to product adoption (Davis et al., 1992). In view of these results, two further hypotheses were formulated: Perceived usefulness will positively influence consumers’ attitude, which will lead to the intention to adopt innovative FMCG; and perceived ease of use will positively influence consumers’ attitude, which will lead to the intention to adopt innovative FMCG.

The next variable considered was perceived importance. This variable deals with the relevance of the product to the consumer’s functions or needs. Importance is critical because it influences a person’s judgment in product preference and usage. If the product is viewed as essential consumers will easily adopt it (Bloch, Brunel, & Arnold, 2003). This statement led to the next hypothesis: Perceived importance will positively influence consumers’ attitude, which will lead to the intention to adopt innovative FMCG.

The acceptance of an innovation by social networks may be an indicator of its importance and motivate individuals to imitate (Kraut, Rice, Cool, & Fish, 1998). The opinions of people who are close to the potential adopters constitute the basis for the use of a novelty. The effects of social norms may be direct, such as when a person feels the need to go along, or indirect, through its effects on a person’s attitudes (Warshaw, 1980; Davis, Bargozi, & Warshaw, 1989). Thompson, Higgins, and Howell (1991) and Igbaria, Parasuraman, and Baroudi (1996) investigated the role of social norms and found significant effects. For this reason, the research formulated hypothesis number six as: Social influence will affect consumers’ attitude towards innovative FMCG, which will lead them to develop intention to adopt.

A person’s tendency to accept an innovation independently of others plays a major role in influencing attitude and leading to intention to adopt a new product (Zmud, 1984; Gatignon & Robertson, 1985). Given the same level of beliefs and perception about a product, individuals with higher personal innovativeness traits are more likely to develop positive attitudes towards adopting than the less innovative individuals (Agarwal & Prasad, 1998). Based upon these findings, the final hypothesis was developed: Personal innovativeness traits will positively impact consumers’ attitude towards innovative FMCG, which will lead them to develop an intention to adopt the product.

Method
The consumer intercept data collection method was used to reach the respondents and to allow the collection of large amounts of data in a relatively short period of time. Previous studies used this method to investigate consumer behavior towards various foods, brands, and products (Batte & Van Buren, 2003). The data collection was conducted during November and December 2010, between the hours of 5:00 and 7:00 pm Sunday through Thursday and on Friday and Saturday between the hours of 1:00 and 6:00 pm. Random consumers were stopped in streets, shopping malls, college campuses, sports clubs, and retail outlets. The respondents were asked whether they would be willing to participate in a brief research study. Those who agreed were given a short description of the survey process. The respondents were given a self-administered questionnaire on the spot or taken to a nearby location to complete it. This questionnaire allowed minimum interference with the consumers while they answered the questions. It ensured more reliable responses from participants, since they did not feel the need to conform to the questioner’s expectations, as can happen when questionnaires are administered orally.

The survey was originally created in the English language. In order to use the questionnaire for Arabic speaking Egyptians, it was translated from English into Arabic by a bilingual speaker whose native language was Arabic. This translation was then back-translated by another bilingual whose native language was English. This procedure ensured that the Arabic version of the questionnaire was the equivalent of the English version.

**Results**

Out of the 900 self-administered questionnaires, the researcher received 475 that were complete and accurate, for a response rate of 52%. According to Gay (1996), if the population in an area (country, city, or town) is greater than 5,000, a sample size of 400 or more would be considered adequate. Therefore, the number of respondents in this study was sufficient. The data were analyzed using the SPSS (Statistical Package for the Social Sciences), version 18, in order to answer the research questions and to support or invalidate the corresponding research hypotheses. The statistical tests (Sekaran, 2003; Pallant, 2007) included reliability analysis, validity analysis, frequency analysis, correlation coefficient analysis, and multiple regressions.

**Reliability analysis**

The reliability analysis was carried out first for all variables. This type of analysis indicates the stability, consistency, and “goodness” of each instrument that measures the variables. It uses Cronbach’s alpha as a coefficient to indicate how well the items in a set were positively correlated to one another. The closer the value of Cronbach’s alpha is to one, the higher the internal consistency reliability (Tabachnick & Fidell, 2007). Cronbach’s alpha for all variables on each of the three FMCG (instant soup, drinkable yogurt, and hot drink packets) were above 0.65, indicating that their scales were stable, consistent, and free from error across time and across items. The overall questionnaire, which used an interval scale of seventy-six items, had a Cronbach’s alpha of 0.948. This number indicated high internal consistency, signifying that the items in the set were positively correlated to one another.

**Validity analysis**

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Validity analysis was conducted to determine whether the scale measured what it was supposed to measure. This study used the intrinsic validity, content validity, and face validity tests. The intrinsic validity results (intrinsic validity being the square root of reliability) confirmed that the items in the scale actually measured the overall variables being studied (Ezz Abdel Fatah, 2007). The items in all the scales of the variables were suitable and valid because the intrinsic validity of each one was greater than 0.70. Table 1 shows all results of the reliability and intrinsic validity analysis.

Table 1. The hedonic, rational, and influential components’ reliability and validity

<table>
<thead>
<tr>
<th>Variables</th>
<th>Past study, Cronbach’s alpha</th>
<th>Current study, Cronbach’s alpha and validity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3-in-1 hot drink packets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R</td>
</tr>
<tr>
<td>Prestige</td>
<td>0.69 (Bhattacharya et al., 1995)</td>
<td>0.616</td>
</tr>
<tr>
<td>Perceived enjoyment</td>
<td>0.86 (Shim et al., 1996)</td>
<td>0.838</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>0.92 (Davis &amp; Venkatesh, 1996)</td>
<td>0.878</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>0.91 (Davis &amp; Venkatesh, 1996)</td>
<td>0.787</td>
</tr>
<tr>
<td>Perceived importance</td>
<td>0.75 (Davis &amp; Venkatesh, 1996)</td>
<td>0.793</td>
</tr>
<tr>
<td>Social influence</td>
<td>0.87 (Flynn et al., 1996)</td>
<td>0.782</td>
</tr>
<tr>
<td>Personal innovativeness traits</td>
<td>0.86 (Goldsmith &amp; Hofacker, 1991)</td>
<td>0.851</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.87 (Putrevu et al., 1994)</td>
<td>0.874</td>
</tr>
<tr>
<td>Intention to adopt</td>
<td>0.91 (Putrevu et al., 1994)</td>
<td>0.825</td>
</tr>
<tr>
<td>Overall questionnaire</td>
<td>N of items 76</td>
<td>R= 0.948</td>
</tr>
</tbody>
</table>

58
The content and face validity test were performed to confirm the results of the intrinsic validity. The purpose of content validity is to how well the dimensions and elements of a concept have been defined (Stangor, 2006). The face validity test consisted of a group of expert judges (professors in marketing and qualified researchers) who evaluated and confirmed the content validity of the instrument. They signified that the items used to measure the variables appeared to address the target concepts adequately (Kidder & Judd, 1986).

Descriptive analysis

This study focused on the larger cities of Egypt, with 50.3% of the respondents from Cairo, 33.7% from Alexandria, 8.8% from Port Said, and 7.2% from Suez. The respondents included people of different demographic backgrounds (age, gender, marital status, career, and income), in order to ensure sufficient variety in the studied population. The majority of respondents were aware of the three innovative FMCG. Table 2 shows the demographics of the respondents in this study.

<table>
<thead>
<tr>
<th>Demographic characteristic</th>
<th>N</th>
<th>%</th>
<th>Demographic characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of residence:</td>
<td></td>
<td></td>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cairo</td>
<td>236</td>
<td>49.7</td>
<td>Under 20</td>
<td>20</td>
<td>4.2</td>
</tr>
<tr>
<td>Alexandria</td>
<td>166</td>
<td>34.9</td>
<td>20–34</td>
<td>286</td>
<td>60.2</td>
</tr>
<tr>
<td>Port Said</td>
<td>40</td>
<td>8.4</td>
<td>35–49</td>
<td>124</td>
<td>26.1</td>
</tr>
<tr>
<td>Suez</td>
<td>33</td>
<td>6.9</td>
<td>50–64</td>
<td>40</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>65 and over</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>266</td>
<td>56</td>
<td>Elementary school</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>Male</td>
<td>209</td>
<td>44</td>
<td>High school</td>
<td>39</td>
<td>8.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>College</td>
<td>335</td>
<td>70.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Postgraduate</td>
<td>69</td>
<td>14.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>27</td>
<td>5.7</td>
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<tr>
<td>Job status:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager/executive</td>
<td>57</td>
<td>12.0</td>
<td>Average monthly income:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerk</td>
<td>78</td>
<td>16.4</td>
<td>Less than 2,000 LE (Egyptian pounds)</td>
<td>46</td>
<td>9.7</td>
</tr>
<tr>
<td>Academic</td>
<td>94</td>
<td>19.8</td>
<td>2,000–less than 5,000 LE</td>
<td>200</td>
<td>42.1</td>
</tr>
</tbody>
</table>
Correlation coefficient analysis

Correlation analysis was conducted to indicate the direction, strength, and significance of the relationships among the variables in the hypotheses (Sekaran, 2003; Pallant, 2007). The results showed that, regardless of the specific FMCG, the independent variables—perceived prestige, enjoyment, ease of use, usefulness, importance, and social influence—had a positive and significant relationship with the consumers’ attitude formation leading to adoption intention. The one exception was the variable of personal innovativeness traits which differed in outcome according to the type of FMCG. For the 3-in-1 hot packet drinks, the relationship with the consumers’ attitude formation was positive but not significant. For the drinkable yogurt and the instant soup, the relationship was positive and significant. In other words, once a suitable attitude was in existence, it created a positive and significant relationship with the intention to adopt innovative FMCG.

Multiple regression analysis

The final analysis was multiple regressions. This type of analysis allows a more sophisticated exploration of the interrelationship among the set of variables (Pallant, 2007). The multiple regression analysis found that the effect of the variables changed depending on the FMCG. The variables varied in their contribution and significance to the prediction of attitude formation and adoption intention. Table 3 displays the strength of each antecedent when tested on each innovative FMCG.

Table 3. Contribution of attitude formation leading to adoption intention

<table>
<thead>
<tr>
<th>Innovative FMCG (beta value)</th>
<th>3-in-1 hot drink packets</th>
<th>Drinkable yogurt</th>
<th>Instant soup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-employed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laborer</td>
<td>16</td>
<td>3.4</td>
<td>61</td>
</tr>
<tr>
<td>Professional</td>
<td>43</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>105</td>
<td>22.1</td>
<td></td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>233</td>
<td>49.1</td>
<td>272</td>
</tr>
<tr>
<td>Married</td>
<td>210</td>
<td>44.2</td>
<td>71</td>
</tr>
<tr>
<td>Divorced</td>
<td>21</td>
<td>4.4</td>
<td>73</td>
</tr>
<tr>
<td>Widowed</td>
<td>11</td>
<td>2.3</td>
<td>59</td>
</tr>
<tr>
<td>Number of children:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td>None</td>
<td>57.3</td>
</tr>
<tr>
<td>One</td>
<td></td>
<td>One</td>
<td>14.9</td>
</tr>
<tr>
<td>Two</td>
<td></td>
<td>Two</td>
<td>15.4</td>
</tr>
<tr>
<td>More than two</td>
<td></td>
<td>More than two</td>
<td>12.4</td>
</tr>
</tbody>
</table>
**Discussion and conclusion**

Innovation is one of the key drivers for any industry’s success (Cardozo, McLaughlin, Harmon, Reynolds, & Miller, 1993). Hence, it is important to gain knowledge and understanding of the potential consumers and the factors influencing their adoption decisions. The main purpose of this study was to measure the impact of certain hedonic, rational, and influential components on consumers’ intention to adopt innovative FMCG. This research problem has not been yet fully explored. A review of previous work in this area enabled the researcher to identify the factors that affect consumers’ attitude toward the adoption of new FMCG. These factors were found in and integrated from three different models of innovation adoption (TRA, TPB, and TAM). The chosen variables had not been examined together in past studies. They were previously used in different contexts, such as Europe, North America, Asia, and Latin America, and were applied to products other than FMCG, such as the Internet, assembly lines, e-businesses, electronics, appliances, and other types of technology. The current study has linked these variables and applied them on innovative FMCG in the Middle East (Egyptian) context.
This research examined the variables with respect to three randomly selected innovative FMCG and discovered that, to a certain extent, they yielded results similar to other studies, such as those of Gatignon and Robertson (1985), Ajzen (1991), and Davis et al. (1992). When our hypotheses were tested for the three innovative FMCG, all the independent variables were found to have a positive and significant relationship with the consumers’ attitude formation, except for the variable of personal innovativeness traits. The relationship between personal innovativeness traits and attitude formation differed according to the type of innovative FMCG. Nevertheless, once the attitude was in existence it created a positive and significant relationship with the adoption intention of the innovative FMCG.

Both the hedonic and the rational components were significant when applied to all the FMCG. This research suggests that Egyptian consumers will accept new FMCG and will develop adoption intentions if the goods satisfy their rational as well as their emotional needs sufficiently. Consumers do purchase new products when they believe the product can develop and enhance their image (Rogers, 2003); provides pleasure and satisfaction (Davis et al., 1992); is simple and straightforward to use (Davis et al., 1992); helps to enhance performance (Nysveen et al., 2005); and is relevant and essential to their needs (Bloch et al., 2003).

Social influence was also found to have a significant relationship with consumers’ attitude. In the Egyptian community (like other communities), individuals make changes in their feelings and behavior as a result of interacting with others who are perceived to be similar, desirable, or experts. This implies that consumers’ adoption intentions are influenced by the media (newspapers, magazines, Internet, and radio), and are even more likely to conform to pressure from an individual’s reference group. Social networks and media help develop consumers’ attitudes and opinions about new FMCG. They spread awareness and allow potential adopters to gain knowledge of new products (O’Guinn & Shrum, 1997).

The impact of consumers’ personal innovativeness traits varied in significance depending on the FMCG. This implies that people who adopt the latest FMCG do not always have to possess innovative characteristics. Most consumers do not consider new FMCG as innovations, but as product extensions. These two terms are related—product existence it created a positive and significant relationship with the adoption intention of the innovative FMCG.

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The impact of consumers’ personal innovativeness traits varied in significance depending on the FMCG. This implies that people who adopt the latest FMCG do not always have to possess innovative characteristics. Most consumers do not consider new FMCG as innovations, but as product extensions. These two terms are related—product extension is, after all, a type of innovation—but consumers do not perceive it in this way. The reason behind this assumption may be that novel FMCG provide extra features, improvements, and benefits to the familiar existing products (Rothwell & Gardiner, 1988). As a result, acceptance of the products is quick, less risky, and affordable, and does not require change on the part of the consumer (Zairi, 1995).

Although all the hedonic, rational, and influential variables were significant for each type of FMCG, the findings revealed that they were ranked differently according to each FMCG. This may be due to the fact that every FMCG is viewed by each consumer in a different way. Innovation is a subjective evaluation. For this reason, companies planning to produce FMCG should generate creative ideas with respect to both the functional and the emotional aspect of the products. The empirical data make it clear that new products entering the market should be relevant to consumer needs, easy to use, and useful. At the same time they should give a sense of satisfaction, enjoyment, and status in order for potential adopters to consider them.

**Recommendations**

The market environment in FMCG industries has become intensely competitive (McGrath et al., 1992). Innovation is therefore important as a source of strength and uniqueness (Michaut, 2004). Since the market is crowded with FMCG, companies should ensure that their innovations are distinctive in order to remain ahead of competitors (Kunc, 2005).

The results of this study suggest several recommendations. A variety of hedonic, rational, and influential components have a positive and statistically significant effect on consumers’ attitude and adoption intentions, as shown in this study. Therefore, FMCG companies should focus on product differentiation and positioning based on the variables examined in this study. Companies should generate new product ideas based on both rational and emotional factors.

According to this study, social influences, such as the media, have a positive and significant effect on consumers’ attitudes and adoption intentions. Consequently, FMCG companies should
Companies should include emotional strategies in their marketing communication, since most consumers do not see many practical differences among the FMCG. Emotions lead to better processing of information and better retention in memory (Ray & Batra, 1983). According to Zajonc (1980), people have little control over affect; once such a connection is formed in the mind, it is irreversible. Affect may become separated from content and still remain in the minds of consumers. Emotional positioning in FMCG is thus better than positioning based on rational attributes. Competitors can copy the FMCG rational benefit, but if the original company manages to create a long-term emotional image for its product, competitors will find this difficult to imitate.

Consumers also rely on social networks to help them choose new FMCG and to reduce the risk associated with the adoption. Some consumers believe that interpersonal information is more authentic and reliable than information from external sources, including formal marketing channels. FMCG companies should therefore use sales-promotion strategies to enhance triability. Most consumers are more likely to adopt a product if they receive a sample first to try out (Rogers, 1995).

Limitations directions for future research

A number of limitations prevent this study from being generalized among the Egyptian population. The first of these was the selection of three specific innovative FMCG. This choice necessarily excluded other products, thus neglecting other types of innovation that could also be found in the product category of foods and beverages. As a result, the data analysis will apply only to the products discussed in this study. The hedonic, rational, and influential factors associated with one product will not necessarily be the same as those of another product. For further validation of the proposed model, it should be tested on other innovative FMCG, since not all innovations are similar (Garcia & Calantone, 2002; Michaut, 2004).

The second limitation arises from the use of the consumer intercept data collection method in order to reach the respondents. This method ensured the collection of large amounts of data in a relatively short period of time and in an economical way. However, this technique has the disadvantage of convenience sampling. Therefore, the end results are not truly representative and cannot be generalized. Future research in this area would benefit from drawing a larger probability sample using, for instance, random sample selection techniques.

The data for this study were collected over a period of two months (November and December 2010). The comparatively brief period of time allowed only a restricted number of respondents (475) to participate. The sample size was very small compared to the cities’ populations. This research also focused only on large cities, so that the outcomes are not representative of the whole country of Egypt. For future research, a larger sample is needed and the data should be gathered proportionately from all regions of the country.
Reference:


The Impact of Export Development Programs on Export Performance of Firms through Innovation Capabilities

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Abstract

The most traditional and popular way to enter the international market is exporting. To reduce the negative impact of these export-related barriers and expand the performance of private enterprises in outside markets, many governments provide their assistance to private-sector firms via a broad range of export development programs. Innovation has been traditionally considered as a generator of Competition, which leads to organizations’ superior performance. The purpose of this paper is to investigate the effect of export-development programs on firms export performance via innovation capabilities, innovation on export market performance and export financial performance separately, and the impact of export market performance on export financial performance. Required information is gathered using a questionnaire and analyzed through the AMOS software. The results indicate that the Trade Volubility activities of Export-development Programs had the greatest impact on innovation capabilities and firms export performance. In other words; Addressing the elements and factors such as Visiting foreign markets, Inviting businessmen and foreign reporters, And follow the laws of a foreign Can be effective in the field of exports.

Keywords

Export-Development Programs, innovation capabilities, export performance

Introduction

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The development of export activities is a first step in the growth strategy of firms. The necessity to continue for firms based in small, open markets, expanding export activities and broadening the Geographical domain of export activities is growth. Research states that exporting firms have a higher survival rate and achieve greater employment growth compared with non-exporters (Bernard and Jensen, 1999; Muuls and Pisu, 2007). Important determinants of successful exports are investments in capital and technologies that lead to higher labor productivity, while the introduction of product innovations in particular is often associated with export decisions (Cassiman and Martinez-Ros, 2007; Becker and Egger, 2007). In an era of highly unpredictable markets and rapidly changing technology, exporters should increase their innovation capabilities to satisfy market demands in order to sustain long-term competitive advantage (Panayides, 2006). Tidd et al. (1997) indicated that issuers that have higher product and service innovation capabilities can earn double the profits of those producers without innovation. We then present the research design, including the survey questionnaire, samples, and measurement, followed by a discussion of the statistical results and managerial implications.

Innovation is considered a key aspect in firms competing successfully in the market. A successful company is conditioned not only by the organization’s capacity to determine market needs; the firm must find the best way of satisfying customers through competitively viable offers. Innovation is perhaps the tool to achieve such offers (Han et al., 1998). Innovation can be considered as an essential component for firms simply wanting to remain competitive (Darrock and McNaughton, 2002). To be successful, the primary task of the company is to distinguish the perceptions and wants of the market in order to create products with a superior value. Given that this best value is highly subjective and exists only in the Customer's mind, it is necessary to learn their comments and ideas about the usefulness of the product, i.e., their perception of what they get and what they must give in exchange. In this sense, organizations may be observed as information-processing organisms operating in a dynamic and complex context, which use this information to decrease their uncertainty in the decision-making process about innovation (Lievens and Moanert, 2000). To accomplish this, organizations should scan the horizon for new opportunities to satisfy their customers, being capable of innovating to provide solutions to those market needs (Weerawardena, 2003). This indicates that a firm that effectively manages knowledge, coming from both external and internal sources, brings better information for the decision-making and afterwards better offers to consumers; that is, “responding to changing markets often requires the introduction of new products” (Shoham et al., 2005). The point is that there are tensions in many business between wanting to meet the buying preferences of different market segments as closely as possible on the one hand, and on the other the Willingness to supply as
economically as possible via a standardized offer. This means that in order to sustain the competitive success, managers must spend “at least as much time thinking about customers’ needs and how these might be met innovatively as thinking about internal operations” (Johne, 1999).

Acknowledging that innovation has effect on performance, this does not imply that every innovation has a positive impact. That is, it is essential but not sufficient condition to obtain profitability. Therefore, determining if the generated innovation has a positive impact on organizational performance implies discovering why some companies are more successful at starting and developing innovation than others (Johne and Davies, 2000).

**Literature review**

Export development programs have been studied over many years, the first studies were accomplished in this field during 1960s. Studies examining Export-Development programs from the standpoint of the receiver have covered a wide array of issues, which can be categorized into five major groups. The first deals with the awareness of Export-Development programs by non-exporters (Kumcu, Harcar, and Kumcu 1995). The second part of studies emphasizes focuses on Portioning firms that are receiving export Aid programs according to the stage they have reached along the internationalization path (Ahmed et al. 2002; Crick and Czinkota 1995). The third part of studies focuses the The relationship between Export-Development programs and factors that stimulate or obstruct the firm’s efforts to initiate and develop export operations (Albaum 1983; Vanderleest 1996). The fourth set of studies reveals that export development programs are instrumental in enhancing organizational and/or managerial competence (Seringhaus and Rosson 1990). The fifth part of studies Surveys the effect of Export-Development programs on the firm’s export performance, either or through the intervening effect of other factors (Shamsuddoha and Ali 2006; Shamsuddoha, Ali, and Ndubisi 2009). Empirical research on export behaviour of firms has produced widespread evidence of a positive correlation between productivity and export performance ( Bernard and Jensen, 1999). The literature has confirmed the notion that more productive firms self-select into export markets (Bernard and Jensen 1999, Bernard et al. 2007). a productivity advantage of the firm is required to enter foreign markets successfully. empirical literature suggests that productivity drives exporting, there is much less robust evidence of a ‘reverse’ effect. Studies have presented mixed results for tests that firms ‘learn by exporting’ and are able to improve productivity through their export experience (Arnold and Hussinger 2005; Clerides et al., 1998; Bernard and Jensen, 1999; Delgado et al., 2002; Salomon and Shaver, 2005; Damijan et al, 2008).innovation is recognized as a driver for productivity, a large number of empirical studies have examined the relationship
between exports and various input and output measures of innovation and technological capabilities. (e.g. Hirsch and Bijaoui, 1985; Belderbos and Sleuwaegen, 1998 Basile, 2000; Sterlacchini, 1999).

A number of recent studies have explicitly focused on the effect of the introduction of product and process innovations on exports. There are several reasons why innovation will effect the internationalization of firms. First of all, product and process innovations can make it possible for firms to target new markets (Autio et al, 2000), as innovation efforts result in improved, modified or new products and/or process that may give enterprises a competitive advantage in foreign markets. Innovation is an idea or object that is perceived as new to an individual or another unit of adoption (Fruhling and Siau, 2007; Hsu, 2006).

Innovation capability indicate to the implementation or creation of technology as applied to systems, policies, programs, products, processes, or services that are new to an organization (Chang and Lee, 2008; Damanpour and Evan, 1984).

Over the last decade, many empirical studies have found evidence in favor of self-selection of more productive firms into exporting; supporting a theoretical prediction by Melitz (2003) and others that Dissimilarity in firm productivity affects firms’ decision to start exporting. On the other hand, the evidence has been mixed on the “learning-by-exporting” Assumption that exporting firms experience an improvement in productivity by getting access to Technical skills from export markets. A few studies, such as Girma et al. (2004), De Loecker (2007), and Hahn and Park (2009), have found positive learning-by-exporting effects.

However, both the theoretical and the empirical literature say little about the mechanisms involved: the theoretical model on the self-selection effect simply assumes that firms’ productivity levels are drawn randomly from a possibility distribution without describing the origin of productivity differences, while the empirical studies do not explore the mechanisms underlying the learning-by-exporting effects. In recent years, an enhancing number of empirical studies have tried to identify the missing link between innovation, performance, and exporting, being aware of the importance of firms’ innovative activities for their technological progress and productivity growth, as suggested by theories of firms’ growth and endogenous growth theory (Romer 1990, etc.). Particularly in European countries, the interactions between exporting and innovation have been a research topic of major interest. Several studies, using firm-level data, have investigated the innovation-productivity-export link, and some found a positive effect of innovation on productivity and exporting. Innovation capability is also the ability of firms to Absorb and use external information for transfer into new knowledge (Cohen and Levinthal, 1990).

There are two key aspects of innovation: the degree of innovation and the scope of innovation. The degree of innovation is differentiated into radical and incremental innovation. Radical innovation is a
significant breakthrough in a new product, new market, or new technology (Green et al., 1995). In contrast, innovation range refers to the Classification of innovative activities applied by a manufacturer (O’Regan and Ghobadian, 2005). Green et al. (1995) also indicated that innovation is a multi-dimensional concept where Producers focus on product, process, and service to implement gradual reform (e.g. product line expansion, current function, and minor adjustments in operation activities). Weerawardena (2003) considered innovation to be modification of product, process, service, organizational systems, and marketing systems in order to create customer value. The range of innovation capability consists of technical innovation and executive innovation (Damanpour, 1991). Technical innovations Comprise products, marketing, services, and the technology used to produce products, product sales, or render services directly related to the basic work activity of an organization (Damanpour and Evan, 1984; Daft, 1982). This study examines the aspects of innovation scope emphasizing the five most frequently studied innovation capabilities: product innovation, process innovation, marketing innovation, service innovation, and administrative innovation:

1. **Product innovation.** It is the development of a new product to the market or the modification of existing products in terms of function, compatible with quality (Liao et al., 2007).

2. **Process innovation.** It involves creating and improving the method of production, and the adoption of new elements to the firm’s production process (Damanpour, 1996).

3. **Marketing innovation.** It refers to market research, price-setting strategy, market segmentation, advertising promotions, retailing channels, and marketing information systems (Vorhies and Harker, 2000; Weerawardena, 2003).

4. **Service innovation.** It refers to manufacturers’ engagement in various innovation activities to enhance customer satisfaction, including after-sale services, warranty policy and order placement systems (Gopalakrishnan and Damanpour, 1997).

5. **Administrative innovation.** It refers to changes in organizational structure or administrative processes, such as the recruitment of personnel, the allocation of resources, and the structuring of authority, and rewards (Damanpour, 1992; Gopalakrishnan and Damanpour, 1997).

**Research model and hypotheses**

Export development programs are initiatives of government as well as other private entities and are thus funded by public funds, which mean the taxpayer’s money.
Innovation activities seem to play an important role in explaining differences in performance and export activities of firms. (Brouwer and Kleinknecht, 1993, and Wakelin, 1998). Hirsch and Bijauoi (1985) find a positive impact of innovations on exports. So, in this article, the associating between export and innovation (impact of export development programs on export innovation capacities) is stated.

Thus, we hypothesize the following:

Export-Development Programs are government Measures that help Domestic firms perform their export activities more effectively. However their Variety, the Common goal of these programs is to act as an “external resource” for firms, Supporting them overcome Different obstacles to exporting (Seringhaus 1986; Seringhaus and Rosson 1990). One such obstacles is the lack of sufficient employees to address the extra work (e.g., visiting customers abroad) and the specialized procedures (e.g., export documentation) involved in international operations (Gomez-Mejia 1988).

Figure 1 : The Conceptual Model
Information is another important organizational resource because it helps the firm reduce the high level of uncertainty that characterizes the heterogeneous, Complicated, and turbulent international business environment. However, many Issuers (1) do not have the means to acquire foreign market information, (2) are not aware of the specific sources from which this information can be extracted, (3) do not know the Particular kind of information required to identify and/or analyze export markets, and (4) face difficulties in effectively using the information collected. In Reply to these limitations, a wide scope of Export-Development Programs provides useful information assistance to private firms, usually focusing on foreign country profiles, international business practices, and contacts with potential overseas partners (Crick and Czinkota 1995).

\[ H \text{: Information support–related Export-Development Programs has a positive effect on its export related innovation capabilities.} \]

Governments offer several Educational Plan, such as training seminars, assistance with export procedures, and export counseling, that help firms solve these problems. These programs Objective to create a more positive attitude among business managers toward profit and growth opportunities abroad while minimizing negative perceptions about risks, costs, and complexities associated with exporting (Leonidou, Katsikeas, and Piercy 1998).

\[ H \text{: Education- and training related Export-Development Programs has a positive impact on its export-related innovation capabilities.} \]

Different Trade Volubility programs, such as trade shows/exhibitions, foreign trade missions, and the support provided by trade offices abroad, can also Promote positive thinking about exports (Shamsuddoha and Ali 2006).

\[ H \text{: Trade mobility–related Export-Development Programs has a positive effect on its export-related innovation capabilities.} \]

To aid private firms, government organizations usually offer specialized training, development, and counseling services. In addition, engagement in export operations often requires extensive expenditures (e.g., marketing-mix adjustments), which impose serious financial strains on the firm (Leonidou 2004). In this regard, government support usually takes the form of financial aid–related programs, such as export credit guarantees and low-interest loans.
**H:** Financial aid–related Export-Development Programs has a positive effect on its export-related innovation capabilities.

Several empirical studies had shown a positive and significant impact of innovation on export market performance. Hirch and Bijaoui (1985) Investigated this issue in Israel, and found that innovative firms were more likely to have export activities. Basile (2001) Revealed That the introduction of product and production process innovations had a positive impact on export behavior. Among others, Smith *et al.* (2002) also found that innovation was an important factor for being exporting firms. Some argued that innovation played an important role in overcoming barrier to internationalization (Harris and Li, 2006). Based on the results of a number of preceding studies, we hypothesize that:

**H:** The innovation has a positive effect on export market performance.

Measuring the results of a firm's policies and operations in monetary terms. These results are reflected in the firm's return on investment, return on assets, value added, etc is export financial performance. Also among the three innovation characteristics variables (R&D, intangibles, and goodwill) R&D is positively significantly associated with four patenting activity measures, technology strength, patent count, Science strength, and research intensity. The results also indicate that goodwill and intangibles are important assets and contribute to increasing firms’ financial performance. (AL-KAZEM, 2009) According to previous research we hypothesize that:

**H:** The innovation has a positive effect on export financial performance.

*Export Market Performance and Export Financial Performance.* Market performance refers to the company’s ability to satisfy, retain, and develop customers in overseas markets by offering products, services, and prices suitable to their needs (Moorman and Rust 1999). Higher levels of customer satisfaction will enhance repeat purchases and attract new customers through a positive product reputation, thus improving company sales. In addition, by developing and expanding its customer base, the company will more deeply penetrate the market and improve its sales turnover and market share. The positive link between market performance and financial performance is well documented in the domestic marketing literature (e.g., Homburg, Grozdanovic, and Klarmann 2007; Ramaswami, Srivastava, and Bhargava 2009; Zhou, Brown, and Dev 2009). Thus:

**H:** The firm’s achievement of high export market performance leads to high export financial performance.
Apart from increasing resources, export development programs can strengthen the firm’s export related capabilities. Identifying foreign business opportunities provides such a capability, which, however, is limited because of restrictions in conducting international marketing research. Many firms enter foreign markets in an accidental and reactive manner (usually in response to unsolicited orders from abroad) rather than adopting a systematic approach to locate, analyze, and exploit export opportunities (Yip, Biscarri, and Monti 2000). Government action can aid Issuers improve this capability through difference Trade Volubility programs, such as arranging individual trips abroad, taking part in foreign trade missions, and participating in international trade exhibitions (Kotabe and Czinkota 1992). In addition, to manage their operations in overseas markets more effectively, Issuers usually seek financial assistance from governments, such as in transferring money, accommodating foreign exchange risk, and dealing with working capital problems (Singer and Czinkota 1994).

Another important export capability is building relationships with foreign Middlemen and customers (Leonidou 2004). However, the establishment of such relationships is cumbersome because of communication problems resulting from the great geographic distance separating Purchasers and sellers in international markets and capable distributors/agents abroad that can offer adequate and sufficient high-quality services. These capabilities take the form of organizational processes, such as order fulfillment, new product development, and service delivery. To outperform the competition, the firm must have certain distinctive capabilities that support a market position and are difficult to match. Such capabilities must be carefully managed through, for example, the commitment of adequate resources, the assignment of suitable people to the right posts, and continued efforts to learn from the market. Such distinctive capabilities are vital in helping the firm effectively adapt its strategy to environmental changes (Prahalad and Hamel 1990).

As with resources, the deployment of the right capabilities aids the firm successfully implement marketing strategies (Slotegraaf, Moorman, and Inman 2003). In an exporting context, certain key capabilities are particularly vital in developing effective export marketing strategies. These include (1) the identification, evaluation, and exploitation of opportunities that arise in foreign markets (Souchon and Diamantopoulos 1996); (2) the building of sound and long-lasting relationships with distributors, customers, and other parties to better understand and respond to the requirements of the export market (Leonidou and Kaleka 1998); (3) the modification of the firm’s marketing mix in accordance with the needs of overseas customers (Cavusgil and Zou 1994); and (4) the development of innovative products,
methods, and techniques to deliver superior value to target markets (Calantone, Schmidt, and Song 1996).

**Research design methodology**

In this article the collection methods is used for gathering data is distributing questionnaire. Total number of 86 questionnaires were distributed in the Ardabil. data used in this work, are related to export companies that majority are small and medium enterprises. The objective of this research is functional and the research method is Test description. In this case the method used to collect information is field and library study. Statistical population included export companies in the Ardabil the sample size is unlimited and the method of sampling is Simple random, also all individuals have a chance of being selected and equal opportunity for all. This article has written to analyze the product, market and internal process of company performance innovation.

The research instrument was a structured questionnaire that consisted of three major parts. The first part focused on information related to the respondent’s export activity, The second section pertained to the overall adoption and evaluation of Export-Development Programs and the extent to which the firm had used specific over the last three years. The third part section requested information about the firm’s export market and financial performance. To decrease the possibility of potential bias, a set of questions measured the degree to which the respondent was (1) responsible for export operations, (2) directly involved in the firm’s export activities, (3) knowledgeable about dealing with the firm’s export markets, and (4) confident about answering the questionnaire (Cannon and Perreault 1999).

In total, we identified Several Export-Development Programs. Exporters and asked respondents to state on a five-point scale the degree to which they adopted these in the last three years (1 = “very small,” and 5 = “A lot”). We divided Export-Development Programs into four major groups: information, trade mobility, education and training, and financial aid. However, we did not empirically test the last group of programs, because the respondents rarely employed them, although we did include them in the conceptual model. The chi-square statistic of this model is significant ($\chi^2 (268) = 950, p < .01$), as we expected, given the sensitivity of this statistic to sample size (Bagozzi and Yi 1988).

**Study Reliability**

In this study the reliability of 86 questionnaires were analyzed with SPSS software. The alpha coefficient results for all cases is around 0.898, which is indicated to good reliability. In this study,
Cronbach's alpha was used to check the reliability. It has demonstrated that if the alpha coefficient to be more than 0.7, Test reliability is acceptable.

The International Journal of Business and Management Research

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a. List wise deletion based on all variables in the procedure.

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Data analysis

Export development programs help to private companies to carry out their export activities more effectively. Despite the diversity in each of these programs, their shared goal is helping these companies overcoming to the export Various barriers. Export companies with a national export development program with four components include training, business dynamism, information, and finance-related exports can ensure their success in foreign markets field.
Using data obtained from questionnaire at the level of export companies, this article has been determined that the trading dynamism has a more effective role on export companies from whole components. With the information obtained from this analysis can say that the innovation have most impact on finance performance of company that Through increasing sales, market share and company growth rate, over the past three years has a positive impact on improving its performance.

Using the AMOUS program, a data analyze has been done that the results indicate that from whole National export development programs, the dynamism trade and export finance, have the greatest impact on innovation and training and information are in the next category. As can be seen, Export market performance of companies has a positive impact on its financial performance of exports. Activity in overseas markets requires specialized knowledge of marketing that there are in many companies involved in exports.

In addition, although existing a marketing information system to identify, evaluate and exploit opportunities in foreign markets is critical, Many companies have not sufficient resources to create, manage and maintain such unit possessed. To help private companies, governments often provide specialized training and consulting services. In addition, interaction in export operations often imposes financial costs to companies.

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Using data obtained from questionnaire at the level of export companies, this article has been determined that the trading dynamism has a more effective role on export companies from whole components. With the information obtained from this analysis can say that the innovation have most impact on finance performance of company that Through increasing sales, market share and company growth rate, over the past three years has a positive impact on improving its performance.
In this regard, the support is in the form of grants (such as export credit guarantees and low interest loans). With obtained information, it can be stated that innovation has the largest impact on firms financial performance. So it can have positively effect on firm performance development via increasing company sales, market share and company growth rate over the past three years.

Figure: AMOS (standardized estimates)
Ie: Information-related Export Development Programs
Ee: education- and training related Export Development Programs
Te: trade mobility-related Export-Development Programs
Fe: financial aid-related Export-Development Programs
Ic: Innovation Capabilities
Mp: export market performance
Mf: export financial performance
Conclusions

Our study highlights the importance of export development program acceptance in enhancing the firm’s performance in export markets. However, the link between the use of these programs and export performance is not direct but rather is achieved via an enhancement of the firm’s resources and capabilities required to operate internationally. These augmented organizational resources and capabilities are also lead to the development an effective export marketing strategy that matches opportunities and threats derived from the foreign business environment. The implementation of this strategy aids firms achieve advantages over the competition and offer greater value to overseas customers. These competitive advantages enhance both market performance and financial performance in export markets. Firms with high export market performance eventually create better export financial performance. This study reveals that the use of export development programs enhances organizational export resources and capabilities. This supports the view that government helps acts as an “external resource,” which, if properly used, aids firms reduce human, financial, marketing, informational, and allied Shortcomings that Hamper export development. Exporters will also be in a better position to pursue various organizational processes vital to successful exporting, such as foreign market sensing, relationship building, and marketing adaptation. In addition, consistent with the findings of prior research (Ahmed et al. 2002; Crick and Czinkota 1995; Francis and Collins-Dodd 2004), our study shows that Export-Development Programs are more instrumental for small firms than for large firms.

Joint problem-solving practices also have positive influences on several innovative capabilities. Nonetheless, long-term partnerships have significant effects on the development of only two (product and process) out of five kinds of innovation capability. Most of the respondents in this study are small firms that do not have Significant R&D budgets to engage in desired product and process innovations. As a result, those firms often seek to establish long-term partnerships with the large international clients from whom they are able to get the essential resources and support for product and process innovations. This finding is Compatible with Lin’s (2004) observations. Extending from the statistical results, we propose the following issues for future research. Seemingly, to achieve the desired innovation capability, firms must look beyond internal efforts and include joint activities with their customers.

Our results emphasize the important role of innovation as a major driver of export Performance. The findings confirm results of earlier studies, suggesting that in Specific new product introductions and product upgrading are often necessary for export competitiveness and the penetration of foreign markets as firms seek to accept their products to foreign market conditions and demand (e.g. Bernard et al. 2007). The implication of the findings is that policies to stimulate persistent innovation efforts, and in Specific...
product innovation, are necessary to stimulate export competitiveness and may serve as one of the most effective export development policies.

Learning-by-exporting effects have been shown in a number of other empirical studies, but to date, the mechanisms and sources of learning-by-exporting effects have not been adequately investigated, and there is still a long way to go until we have a good understanding of learning-by-exporting effects and can derive appropriate policy recommendations to enhance firms’ growth in the globalized economy. Export marketing–related resources and capabilities, augmented with input received from export development programs, could provide the basis for designing marketing strategies that can better exploit opportunities in export markets. Although overwhelming majority exporting studies assumes a direct impact of export marketing strategy on export performance (Leonidou, Katsikeas, and Samiee 2002), this study shows that the link between these two constructs is mediated by competitive advantage and innovation.

This study is one of only a few to show that the firm’s export-related competitive advantages and innovation have a direct impact on its export performance. In contrast with the majority of extant exporting research (for reviews, see Katsikeas, Leonidou, and Morgan 2000; Zou and Stan 1998), our study adopts a multidimensional perspective to measure export performance. It also proceeds one step further by distinguishing between export market performance and export financial performance, with the former regarded as a prerequisite for the latter (Ramaswami, Srivastava, and Bhargava 2009; Zhou, Brown, and Dev 2009). Our findings verify that cost, and service competitive advantages enable the firm to achieve better export market performance by delivering customer value more effectively. Finally, our study confirms that firms can get stronger financial results in export markets through this positive foreign customer response behavior.

This study has several implications for both business managers and public policy makers. For example, it stresses the valuable role of Export-Development programs in helping business managers ultimately achieve superior financial performance in export markets.

References


Bruneel, J., Yli-Renko, H., en Clarysse, B. 2009. How key partners shape the extent of


NOTES

1. Kumcu, Harcar, and Kumcu (1995) identify four major reasons that limit the effectiveness of national export development programs:
   1. lack of understanding—government export assistance organizations’ failure to understand the exporters’ needs and goals;
   2. problematic targeting—the design of export development programs for the average exporter rather than targeting the different stages of export activity;
   3. communication difficulties—the inability of government agencies to communicate the content and value of the export-assistance programs to target firms; and
   4. perceptual problems—exporters’ negative perceptions of the adequacy, appropriateness, and usefulness of the programs received.

2. Although this paradigm was introduced relatively recently, it provides information on topics such as how resources are applied and combined, what makes competitive advantages sustainable, and how business performance is generated (Priem and Butler 2001). However, despite the successful use of the RBV in other fields of international business, such as supply chain management and logistics, strategic alliances, and entrepreneurship, it has been rarely used in the context of export business (Barney, Wright, and Ketchen 2001).

3. Although prior studies have used organizational resources and capabilities interchangeably to denote tangible and intangible assets the firm uses to implement its strategy, recent research has viewed capabilities as the firm’s accumulated knowledge, abilities, and skills that help it use, combine, and enhance the value of resources (Amit and Schoemaker 1993; Murray, Gao, and Kotabe 2010). Thus, although resources are observable (but not always tangible) assets that can be valued and traded, capabilities are unobservable (and therefore intangible) elements that change hands only as part of the entire unit (Makadok 2001).
4. Some researchers (e.g., Day and Wensley 1988; Murray, Gao, and Kotabe 2010) consider a direct impact of resources and/or capabilities on competitive advantage, while others (e.g., Hult, Ketchen, and Slater 2005; Kaleka 2002) show that competitive advantage is the result of strategy implementation. Still others (e.g., Morgan, Kaleka, and Katsikeas 2004) propose links of competitive advantage with both resources and capabilities, and strategy. In our study, we propose that the implementation of the firm’s export marketing strategy has a direct impact on export competitive advantage, and export-related resources and capabilities have a supportive role.

**Appendix**

Definitions of Export-Development Programs

1. **Information-Related Programs**
   a. Information about foreign market opportunities
   b. Specific information about profile of man doing business with a particular firm Provision of information regarding organizational aspects of potential foreign partners.
   c. General information about doing business in a specific country
   d. Provision of marketing information/advice
   e. General literature on how to export
   f. Export publications

2. **Education- and Training-Related Programs**
   a. Organization of export seminars/conferences
   b. Training programs specializing in exporting
   c. Training on export documentation
   d. Provision of counseling advice on export
   e. Foreign language support

3. **Trade Mobility–Related Programs**
   a. Assistance in participating trade shows/exhibitions
   b. Participation in trade missions in foreign markets
c. Support by trade offices abroad

4. Financial Aid–Related Programs

a. Funds transferring

b. Export credit

c. Export loans

5. innovation capabilities

Quality of communication with suppliers

Company relies on R & D and innovation

Companies can introduce new products to market
Abstract

New Product Development (NPD) is critical strategy in automotive industry. (NPD) is a necessary activity for automakers survive in today’s turbulent markets. Many automakers have built competitiveness and obtained tremendous profit through (NPD). Automakers to provide variety of customer’s demands also revenue growth, and competition need to be innovative, (NPD) framework will provides practical way to approach to its goal. The purpose of this paper is to review the nature of (NPD). It consider classification of (NPD) in automotive industry, necessity of launching (NPD) in automotive industry, benefits of being the first in automotive industry and, factors that affect (NPD) by introducing a framework for launching (NPD) in automotive industry.

Key words: New Product Development (NPD), Automotive Industry, Automaker, Automotive Market

1. Definitions of New Product Development (NPD):

According to the literature review there are lots of definitions for New Product Development (NPD) such as:

1.1. New Product Development (NPD) is a process which starts from a motivating goal, moves through an idea conception phase, is reduced to practice in its implementation phase, and is completed in a transitional phase, during which time the product becomes established.

2.1. The overall process of strategy, organization, concept generation, product and marketing plan creation and evaluation, and commercialization of a new product and also frequently referred to just as product development.
3.1. The process a product goes through before introduction, involving seven phases: idea generation, screening ideas, concept testing, business analysis, product development, test marketing and commercialization.

4.1. The overall process of strategy, organization, concept generation, product and marketing plan creation and evaluation, and launch of a new product. Sometimes restricted in meaning to that part of the process done by technical (R&D and manufacturing) departments, Sometimes used to denote the person or persons engaged in the new product creation task. New Product Development (NPD) concerns activity within an organization, in contrast to the acquisition of finished new products from outside.

5.1. The creation of new products needed for growth or to replace those in the decline stage of their life-cycle; the stages in the New Product development (NPD) process are commonly listed as idea generation; screening; concept use of marketing research during New Product Development (NPD) process development and testing; the formulation of marketing strategies; business analysis; production; market testing; and commercialization.

6.1. Besides these definitions it is interesting to note that New Product Development (NPD) is not the only term used to describe the process by which new products are developed. The particular term employed depends on the discipline of the researcher. Hence, “NPD” tends to be the label used by those in marketing; those working in technological fields refer to “innovation”, while those in the sphere of engineering often refer to “design”. In this paper, the term NPD is used to describe a multidisciplinary process that involves many separate tasks which begins with an idea and ends with the launch of a new product in automotive industry.

2. Classification of New Products in Automotive Industry:

If we approach innovation from the automaker’s point of view, products can be classified into several categories:

1.2. Me-Too Products: A ‘me-too product’ is a product that is basically the same as an existing one, but produced by another automaker. This category of new products represents the largest group of new automotive products. For instance: A green vehicle or environmentally friendly vehicle produced by both Fiat and Toyota.
2. **Line Extensions**: These are new variants of an established product. Typical examples are new color for existing products or new option in a family of products. The design process of these products can be characterized by relatively little effort and development time, small changes in the manufacturing process, little change in marketing strategy and a minor impact on storage and/or handling techniques. Good example is Maruti Suzuki Zen LX, Zen VX.

3. **Repositioned Existing Products**: These are current products that are again promoted in order to reposition the product. For example, by the increased attention for better and safety stop or controlling cars in difficult situations, new version of Anti lock braking system (ABS) introduced to automotive industry. The development time for repositioned products can be minimal and only the marketing department should put efforts in capitalizing the position market.

4. **New Form of Existing Products**: These are existing products that have altered to another form. These products may require an extensive development time because the physical properties of the product change drastically. For example: Peugeot 206 which is sedan car originally, has altered to Peugeot 206 SD which is a hatchback model by Iran Khodro Company (IKCO). And SAIPA (Automobile Manufacturing Group in Iran) launched the Iran-made "Saipa National Engine 231" and unveiled its new model: "Miniator" which is new developed version of its established product.

5. **Innovative Products**: These are defined as products resulting from changes in an existing product otherwise than described above. The changes must have an added value. The design process is generally longer and more expensive when more product changes are required. Marketing can also be costly because consumers may have to be educated to the innovation. However, in some cases time and costs of innovation are relatively little. For instance: in the case of a successful innovative good example is “Tata Nano” which is a city car manufactured by Tata Motors, one of the smallest as well as lowest powered (35ps) cars in the world.

6. **Creative Products**: also called true new products. This type of products is described as one newly brought into existence, i.e. a never-before seen product. Creative products commonly require extensive NPD, tend to be costly (much marketing effort, new equipment) and have a high failure chance. For example: personal vertical takeoff and landing (VTOL) including (100LS, 200LS, M400 and Autovolantor) which has introduced by “Moller International”.

3. **Purposes of New Product Development (NPD) in Automotive Industry:**
Automakers spend large sums of money for new product development (NPD) due to many important reasons. The reasons for new product development (NPD) in automotive industry are: corporate growth, diversification, and the quest for a competitive edge over rival automaker. There is another specific reason for an automaker to develop new products: exploiting new opportunities. The demand for certain product attributes can suddenly become so intense that automaker is well-advised to create and introduce new marketplace for the new products in order to exploit this new opportunity and meet the strong customer demand. Product development is potentially very important for the purpose of the business development in automotive industry. Along with other forms of development such as market development, product positioning development and supply development, product development can contribute to the attainment of key business objectives. One of the most important objectives can be contributed to by new product development, it is rarely explained how this can be made to occur.

4. Necessity of Launching New Product Development (NPD) in Automotive Industry:

Launching New Product Development (NPD) in automotive industry has become a key driver for revenue growth, competition and, for some automakers, even for survival. The ability to launching New Product Development (NPD) to the automotive market quickly, efficiently and ahead of competition is becoming increasingly important. An efficient new product launch requires integration and coordination among multiple functional areas, including product design, procurement, planning, manufacturing, sales and marketing. In addition, as organizations increasingly leverage core capabilities of other automakers, New Product Development (NPD) has to be delivered through virtual networks, working with partners in a collaborative environment in order to bring new products to the automotive market faster, smarter and cheaper. Consequently, automakers need to integrate itself internally and also externally with suppliers and customers, creating end- to- end supply chain processes and capabilities which impose differences on new product and customer requirements. The New Product Development (NPD) as a fundamental component of automotive industry is made up of all decisions that an automaker makes including six main elements, namely: “who, what, when, where, why and how much” an automaker needs to provide its new product and receive value for its effort.”

5. Obligation of Changes in Automotive Industry:
Some of the changes in automotive industry, that have the potential to impact a new product development (NPD) include:

1. Increased levels of competition
2. Rapidly changing market environments
3. Higher rates of technical obsolescence
4. Shorter product life cycles

6. Benefits of Being the First in Automotive Industry:
   The importance of being the first on the automotive industry is discussed extensively in various sources. Besides the instinctive idea of being the first, other measurable benefits are possible for those that get on the automotive industry sooner with innovative new products:
1. Increased sales through longer sales cycles
2. Increased margins
3. Increased product loyalty
4. More resale opportunities
5. Greater automotive market responsiveness
6. A sustained leadership position

7. New Product Development (NPD) Launching Structure:
   New Product Development (NPD) launching structure in automotive industry can be consisted of the following elements:
1. New Product development (NPD) strategy
2. New Product development (NPD) process
3. New Product development (NPD) methods
4. New Product development (NPD) tools
5. Organization structure to support new product development (NPD)
6. Management of the development structure

1.7. Strategy of New Product Development (NPD):
The strategy of new product development (NPD) includes several components. The first component is “Customer In,” including the recognition of the customer as the reason for being and the use of approaches to gather customer requirements and ensure customer satisfaction. Establishing the strategy itself includes the development of "Customer In" data and information about the competition, technological change, and sales potential. Next, the product development portfolio establishes the desired mix of development efforts from incremental to research. The final component is the process of screening and selecting new product development (NPD) projects.

1.1.7. "Customer In" Understanding the Customer and the Automotive Market:
Customers want higher quality goods, at low prices, targeted just for their needs. “Customer In” enables automakers to direct all efforts, including product development efforts to achieve high levels of customer satisfaction. “Customer In” is a philosophical underpinning a strategic choice to be customer oriented. It starts with the automaker’s leaders and permeates the entire company’s culture. It includes guiding principles such as: Treating the customer as king or queen, Thoroughly understanding the customers’ use of the products, Meeting customer desires and needs, not just demands and specifications, Anticipating the customers’ desires and proactively contributing to customers’ success. “Customer In” is also a comprehensive set of elements, systems, and processes designed to achieve customer focused goals. It uses a multitude of “listening posts” to understand and anticipate customers’ desires and needs, the potential market, and competitors’ current and future capabilities. These listening posts can include structured visits to customers, seminars, trade publications, and complaint reports, comparisons with competitive products, joint calls on end users, market trend analysis, demographics, and many other sources of input. This type of detailed automotive market analysis and competitive evaluation provides the direction essential for continued new product development (NPD) success.

2.1.7. Establishing the Strategy of New Product Development (NPD):
In order to combat potential pitfalls encountered in new product development (NPD) projects, an automaker must establish and utilize a comprehensive development strategy. Establishing strategy requires a proactive approach, which combines the study and understanding of two critical elements of the strategy: Customer In and the marketplace, and automaker’s core technologies and research into future technologies (both design and manufacturing). A thorough understanding of these elements requires gathering data about customers, markets, technologies, and competitors. To make sense of this information, functional maps are useful. Some typical maps include: 1. Product Profile: comparing...
product features and attributes relative to competitors 2. Product Generation: timing and life cycle of products and the relationship of one product to another 3. Engineering Skills: skills composition of the engineering workforce 4. Performance Tradeoffs: range of performance combinations possible among dimensions that may conflict (e.g., weight and efficiency) Integrating the two elements of the strategy (technology and market) enable leaders to formulate good decisions about a desirable future product portfolio with clear goals and objectives. These frontend activities provide the opportunity to address policy issues, market timing and frequency of introduction, technology availability and development, product differentiators, cross functional and multiple project related concerns, skills development, training, hiring and resource balancing. Technology does not have to be developed only from within the company, but can be the result of acquisitions, joint ventures, and automotive industry association efforts. Competitive evaluations provide the ability to make the above decisions armed with the knowledge of what the main competitors’ plans are, allowing the automaker to stop these plans with strategies for automotive market timing, pricing, competitive features, and technology investment and introduction. Automotive market intelligence provides the instruments to assess what the automotive market is demanding by regional areas or target customers, anticipate developing customer trends, identify product differentiators, and determine what pricing the automotive market can bear, predict new product life cycles, and assess sales volume potential. Once the information is gathered and evaluated, leaders can establish the strategy. The strategy includes priorities for which products must be developed and in what sequence, over a three to five year time frame. The new product development (NPD) strategy must result in automakers plan for development and implementation of the knowledge and capabilities available. It should be structured so as to have the technology or process available and proven out prior to project implementation. Leading edge automakers develop and integrate product technology, marketing, process development, supplier, quality and other roadmaps, throughout the business, that support the strategy and evolve into a multifunctional product development roadmap. Once the strategy is crafted, portfolio and project selection can occur.

3.1.7. Developing a New Product Portfolio:
One of the greatest challenges faced by any automaker, which must survive competitive pressures, is the determination of what new products to develop to meet automotive market needs, at what price and at what entry point in time. A subset of this decision process involves deciding how to best use available resources to develop new products that fall into the following three categories:
1.3.1.7. **Platform or Next Generation Products:** Platform products constitute the core of the automaker’s business. They typically have a longer design life because they comprise the basic architecture which incremental new products can be based on. Platform products provide core customers with a complete systems solution; break new ground and involve a significant shift from existing platforms in new product design and process design. The core offerings must provide the desired modularity and standardization, which can be built upon without adding undue complexity.

2.3.1.7. **Incremental Products:** This category includes the improvement or expansion of current product platform offerings with the addition of new performance or aesthetic features; Improvements in design to use more standard parts or modules; And improvements required for manufacturability, reliability, or cost considerations. Incremental products could be needed to address niche markets or to enhance the product portfolio before the next platform products are released.

3.3.1.7. **Breakthrough Products:** This category of development is even more radical than the platform products, usually requiring the use or development of new product and material technologies and related new processes to manufacture the product. Such a product could be the beginning of a new product category and could serve to elevate the automaker’s position relative to its competitors by being first to market with a product in a new business area. In the product development strategy, all three of the above development products are supported by the desirable research and development projects that invest in the new product, material, or process technology knowhow necessary to address technology trends. The leadership must determine what percent of resources to allocate for platform, incremental and breakthrough development projects.

4.1.7. **Selection of New Product:**

The final component of the Strategy of New Product Development (NPD) is a reliable process for selecting development projects. The selection process is founded on a clear understanding of the markets and competition, a well articulated strategy, and targets for the development portfolio. Many automakers are slow to surface and act on new ideas. Therefore, the front end of the development process often presents the greatest opportunity for cycle time reduction. Automakers should be open to new product ideas from both internal and external sources. For expediency, new product ideas must be encouraged, discussed in a responsive forum, and acted upon in a timely fashion. Clark and Wheelwright describe a funnel, which screens a variety of project opportunities and eventually selects a few projects for development. The selection process begins with idea generation. Automaker should institute procedures and incentives that encourage ideas from throughout their company and its
customers and suppliers. Monthly or quarterly, or when a special need arises, new ideas go through an initial screen to determine completeness or readiness for review. The review team checks the idea’s fit with the development strategy, required areas of knowledge, and potential impact. While some ideas are rejected, most move ahead with a least some further investigation to detail the proposed project and its benefits. A second screen is used as a go/not-go decision point. Projects that pass this screen are chartered and launched into the new product development (NPD) process.

2.7. **Steps for Launching New Product Development (NPD) in Automotive Industry:**

The following steps briefly summarize the major dimensions of new product development (NPD):

1. **Clarify the Automaker’s Goals and the Strategic Role of New Product Development for Competitive Advantage:** New product development (NPD) can play a variety of roles in defining corporate strategy to gain competitive advantage. This variability makes the process of new product development (NPD) subject to the emerging automaker’s issues of the day. In general, a long run, focused, and ongoing strategic commitment to attractive automotive market opportunities should define the role of new product development (NPD). New product development (NPD) should be integrated into an automaker’s strategy and significantly contribute to its continuous renewal. Achieving this integration requires the dedication of intellectual resources at all organizational levels. This intellectual process begins with responsiveness to the business environment.

2. **Build Flexibility to Cope with and Mediate Environmental Turbulence:** unstable global business environments are the source of new product opportunities and problems for automakers. Consequently, the critical factors defining the automotive market environment for new products must be scanned on a regular basis. In particular, the effects of technology that reduce the life cycles of products must be carefully monitored. For example, the effects of changing information technology will continue to alter the way that automaker innovate, design, manufacture, and market new products, as well as the way that consumer and other stakeholders respond to those products. They may even redefine markets from traditional channel dependent institutions to direct, interactive exchanges between buyers and sellers. Consumers may dial up an electronic catalog, send in specifications, and receive a customized product (from flexible manufacturing processes) through an express delivery service in days.
3.2.7. *Anticipate Market Acceptance of New Products:* The crux of new product development (NPD) is identifying the unmet needs of potential buyers and other key market stakeholders as the basis for defining automotive market opportunities and translating them into core new product concepts. Potential buyers who are affected by unstable global environments respond largely to their own needs and problems, Identifying the needs of potential buyers and segmenting markets according to those needs is a challenging prospect, but one that enhances new product acceptance. It requires a variety of research approaches that should bring the innovating organization as close to potential buyers as possible. In fact, for many situations, new product development (NPD) should be viewed as an interactive relationship between the innovating automaker and potential buyers (and other key stakeholders) to jointly define and develop the new product. The best way to anticipate automotive market response for a new product is to jointly create it with potential buyers, then estimate when and how many consumers might enter the market to buy.

4.2.7. *Prepare the Organization for the Change Needed to Develop New Products on a Regular Basis:* The new product development (NPD) paradox suggests that automakers respond to the demands of a new product in ways that often create organizational resistance and slow development time. To overcome this resistance, strong leadership, good management, cross-functional teams, and new product champions are crucial. Although the prescription for success may be clear, implementation can be difficult. How does the interruption of organizational processes by new products affect individual career patterns? What are the incentive systems that will motivate highly qualified individuals to join high-risk new product development (NPD) teams? Where in the organization should the new product development (NPD) team be located internally or externally? Resolving automaker’s issues related to new product development (NPD) requires an understanding of critical organizational processes such as strategic choice, influence, communication, decision making, resource allocation, and implementation. Studying and profiling these processes in terms of an automaker’s tendency to innovate will help (1) identify areas needing change, and (2) if processes cannot be changed in a reasonable time, estimate response time to innovate. The outcome of this process will be realistic estimates of development cycle time. The process will also help focus educational efforts among employees to bring about an enlightened view of new product development(NPD) and its role in the future of the automaker and their own careers.
5.2.7. **Operationalize an Ongoing Process of New Product Development (NPD):** How an automaker decides to respond to environmental forces, organizational resistance, and market stakeholder needs defines its new product development (NPD) process. This process has been observed to be sequential, overlapping, holistic, or chaotic. However, because business situations vary, each automaker should craft a process that enables it to (1) maintain a strategic focus, (2) remain flexible to cope with varying degrees of environmental instability, (3) interact with the market to anticipate and/or overcome friction in formulating the new product, (4) integrate organizational efforts and resource commitments to motivate the process through cross functional new product development (NPD) teams, and (5) commit to new product development (NPD) as an ongoing process of organizational renewal. The process should encompass different levels of product concept refinement (ideas, concepts, prototypes, products, and launch programs) and critical management activities (diagnosis, search, design, evaluation, decision making, implementation, and monitoring).

6.2.7. **Build a New Product Decision Support System:** Observation of new product development (NPD) as an ongoing organizational process requires a decision support system to provide timely information. Key elements are identifying new product decision problems, modeling those problems, establishing a data base of the important variables and relations in the model, collecting and analyzing the data through marketing research methods, and using optimization procedures to find the best decision. The design and implementation of new product decision support systems should be linked to an organization wide system to build a useful historical data base yet provide a capability for offline analysis to support rapid retrieval and manipulation of data. Further, the role of decision maker judgment in data collection and modeling activities should be integrated into the new product decision support system, although with care and scrutiny in order to continually learn from its use.

7.2.7. **Estimate the New Product Market Opportunity:** The objective of automotive market opportunity forecasting is to clarify the nature of a market opportunity and to estimate its market potential and market penetration. To accomplish this objective, a model of critical factors that drive the new product opportunity should be formulated, data should be collected to operationalize the model, and the resulting forecasts should be updated throughout development. Estimates of year to year growth, possibly obtained from a data base of analogical diffusion models, are critical for rapidly deciding the value of a new product idea. Unfortunately, the procedures for quickly screening new
product ideas with such information rely heavily on judgment. Future research on expert systems and industry based product analogy data bases may help to improve the speed and reliability of automotive market opportunity forecasting. In addition, the use of enhanced scenarios employing advanced multimedia technology to further define a core concept in the context of rapidly shifting environments is a promising way to better understand the possible evolution of and response to new products.

8.2.7. Formulate a Sales Forecasting Process that Captures Automotive Market Response to New Product Alternatives: In developing models for any of the forecasting processes, but especially sales forecasting, several guidelines should be considered:

1. Develop a system of conceptual models that includes relevant variable

2. Develop a managerial decision model that is simple, intuitive, and logical; if after very careful study it is not understood, revise it or don't use it.

3. To the extent possible, develop rigorous sub models of selected variables in the spreadsheet model to improve estimation and link decisions to market response.

4. Use a variety of data sources (market studies, expert judgment, secondary data) and methods (such as perceptual mapping, positioning, conjoint analysis of preferences and simulations) to operationalize the models and sub models.

5. Submit the model to sensitivity tests with different values and check for robustness.

6. Check assumptions carefully.

7. Use multiple, different, and independent approaches and reconcile estimates when they are divergent.

8. Formulate alternative scenarios using variation in the values and assumptions of the model and consider contingencies

9.2.7. Establish a Financial Forecasting Capability that Provides a New Product Control Chart: Combining market opportunity and sales forecasts with estimates of new product costs, investments, risks, and development cycle time provides a financial control capability that can be summarized in a control chart. The format of this control chart should be agreed upon by the new product team at the outset of the project and followed thereafter. It should include the key measures of performance that guide the pre launch development and post launch tracking of the new product.
Continual updating of all major forecasting processes to reflect changes in the shape of the new product and in the organization and market environment is the basis for realizing a capacity for control throughout new product development (NPD).

10.2.7. **Consider Test Marketing as a First Step to Implementation:** Prior to launching a new product, it is strongly recommended that market’s entry strategy and launch marketing program be orchestrated and tested. This process should involve the use of simulated, controlled, and/or conventional test marketing to evaluate, decide, and refine the product and its launch program. Designing and implementing test marketing approaches should consider the nature of the implementation problems, the new product, its importance to the organization, and the amount of uncertainty in the market environment. In some cases, test marketing can be bypassed in favor of immediate market entry. This approach can succeed with careful attention to tracking the new product launch and modifying accordingly.

11.2.7. **Develop Market Entry Approach that Capitalizes on the Current Market Situation and Complements the Strategic Role of the New Product:** Market entry for new products is highly situational; being first does not always pay. The market entry approach should reflect environmental, organizational, and market factors (potential buyers, competitors, trade, stakeholders) that define the situation. A market entry approach should be based on the timing, scale, and resonance of the launch marketing program. Using market opportunity, sales, and financial forecasts can provide input to an approach for modeling market entry decisions. In particular, launch timing is critical when cycle time and/or competitive factors can make a difference in performance. Recognizing time as a key variable, and making it the focus of a special decision model, may be the best way to handle this market entry decision.

12.2.7. **Launch and Track New Product Programs to Implement Needed Modifications for Success:** Once a new product is launched, the use of various data collection procedures and forecasting models to track performance, modify, and otherwise control the new product can lead to product and program improvements or to a comfortable decision to terminate the product. One issue related to how much effort an automaker is willing to invest in post-launch tracking is problem diagnosis. Quick fixes and program changes that are based on impressions of market problems rather than diagnosis can lead to a products early demise or the extension of mediocre performance. Finding
early launch marketing problems may lead not only to quick modifications, but also to the next
generation new product. Experience has shown that although it will not be used often, diagnosis can be
helpful in all pre and post launch circumstances, even in a postmortem sense. The ultimate value of
new product development (NPD) may be the learning it makes possible learning how to adjust the
marketing program to consumer needs; learning how to educate the potential buyer on the benefits of
the new product; learning why the product won't succeed in the market and why it should be
abandoned now; learning that complete withdrawal is not necessary, but that a next generation product
can overcome the diagnosed difficulties; and, perhaps most importantly, learning to have the patience
to learn.

3.7. **New Product Development (NPD) Methods:**

There are several different methods which automakers can utilize them in launching process of new
product development (NPD). Some important methods are as follow:

1.3.7. Managing the Front-End

2.3.7. Evaluating Trade-Off

3.3.7. Set Based Concurrent Engineering

4.3.7. Lean Production Preparation

5. 3.7. Variety Effectiveness

6.3.7. Risk Management

4.7. **New Product Development (NPD) Tools:**

Here has introduced 12 mostly used tools during new product development (NPD) by automakers:

1.4.7. Quality Function Deployment (QFD)

2.4.7. Kano Methods

3.4.7. Design Quality Estimation (DQE)

4.4.7. Design To Unit Production Cost (DTUPC)

5.4.7. Design for manufacture and assembly (DFMA)
5.7. **Organization Construction to Support New Product Development (NPD):**

Organization to support new product development (NPD) includes establishing the organizational hierarchy, development teams and roles, responsibilities and rewards that support rapid and effective new product development (NPD). Concurrent engineering promotes better inter functional dialogue and more frequent communication during the design process. A cross functional team established during the front end of the development process is highly recommended. Getting team members involved early in the game in participating in the decisions presents the following benefits:

1) Individual member skills are blended with others to bring together a wide array of talents, experiences and knowledge. Together, the quality and creativity of the solutions is greatly improved. 2) All members feel like they have a stake in meeting the program objectives. 3) Concurrency is made possible, dramatically cutting cycle time. 4) Team discussions result in improving the quality of input to the design. 5) Manufacturability issues are more readily addressed. 6) Communication between team members is improved and consensus decision making more easily achieved. 7) Team decisions are proactive and avoid having to be repeatedly adjusted for late input. 8) Conflict between functional areas is greatly reduced. 9) Increased learning and an accelerated learning curve are an outcome. 10) Collocation of team members further improves camaraderie, open and frequent communication, and accelerated problem solving.

*Figure No.1* shows four forms of team organization based on the strengths of the team leader and team members, and constraints imposed by organization structure. Additionally, depending on the type of development program, the team organization could be different. For example, a team set up to develop a new platform would have greater success if either the “Strong Team Leader” organization form or
the “autonomous team” structure was supported. To develop a breakthrough type product that creates a whole new market for the business, the preference is to create an autonomous team organization for maximum leverage if such a strongly self motivated team can be assembled, although a strong team leader can help compensate for functional organization pull on the rest of the team. The challenge of selecting and staffing the development team is not a trivial one. Often not enough thought is given to this issue. A high performance team tasked with new product development (NPD) has to be cohesive. Considerable effort needs to go into selection, team training, agreement on goals, blend of skills (both unique talents and multi skilled individuals), and percentage of time dedicated to team efforts. Experience suggests that the more the following criteria can be satisfied, the better the team’s performance will be:

1) Select an experienced and respected team leader, preferably from the senior ranks. Team leadership can be shared between a strong program manager and a technical person from the engineering organization. The former serves as the organizer and primary interface to the senior management team, as well as the team’s advocate for decisions required of senior management. The latter provides the engineering leadership to achieve and exceed the program’s goals and objectives within the framework provided by the program plan and schedule 2) Fulltime team membership should not exceed eight members, but must be able to represent marketing, sales, product design and engineering, manufacturing engineering, manufacturing, material, and quality representatives 3) Roles and responsibilities must be clearly defined 4) Team members are trained in high performance teaming skills 5) Team members serve from new product concept too shortly after the first few shipments of product 6) Core team members are assigned to the team fulltime if their skills are required to work critical path activities. The remaining members are assigned between 70% and 80% of the time to the project. 7) Team members are preferably volunteers. 8) Team members are given a clear mandate and objectives. 9) Risk taking is encouraged and not punished if things go wrong 10) Team members are allowed to make most decisions effecting rapid progress, e.g. resources to be used, tradeoffs, supplier selection, etc.

11) Team members are responsible to the team leader and are not held to functional based goals and objectives 12) Team members are collocated. 13) Team members are given the tools, equipment, and priorities they need to accelerate development 14) All personality types are included on the team to provide diversity and balance (as indicated by a Myers Briggs type indicator). The real world does not usually permit some of these criteria to be fully or sometimes even partially met. Organization
priorities generally prevent fulltime dedication to the team, resulting in a less than ideal commitment to the product development team. Depending on the project scope (incremental vs. platform), team members may not be dedicated or may have to pull in some part time resources to supplement the core team members. Internal politics may prevent team members from being fully committed to the team leader and the development program.

6.7. **Management of the New Product Development (NPD) in Automotive Industry:**
Management of the new product development (NPD) framework includes clear sponsorship and ownership of the development process, project management, and performance measurement. It also includes the support and behaviors of managers and executives.

1.6.7. **Sponsorship, Ownership, and Project Management:**
Management participation and intervention in new product development (NPD) is required for the following: sponsorship of a project, management reviews, decision making which the development team members are not authorized to make, decision making which could result in a change in direction or a reevaluation of goals or targets, and expert guidance. The level of management involvement with the team will be influenced to some degree by the team organization structure and a level of autonomy determined by team leader and member skills. Either adopting a hands-off approach once the team has been selected or imposing too much management oversight, can be detrimental to the project’s success. The Development Framework should have assigned process sponsor, usually the Vice-president of Engineering and Development. The sponsor’s roles include assigning priorities, allocating resources, managing interdependencies, and reviewing progress for all projects in development and projects in the screening process. The Development Framework should also have an assigned process owner. The process owner’s roles include ensuring that the appropriate methodology is followed, understanding best in class development processes, measuring and evaluating the performance of the Development Framework, and improving the Development Framework. Project management requires a blend of technical and program management skills. Each project should have an assigned project leader, often a chief engineer. The project leader may play a dual role. However, often the project leader and a program manager are assigned to the same development project to complement each other's skills. Their roles parallel the sponsor's roles except that they are focused on a specific development project.

2.6.7. **Performance Measurement:**
the process of setting goals, monitoring progress, and rewarding good performance provides the
motive force that ensures fast development cycle times. Setting goals that are supportive of a business
strategy which encourages product innovation and rapid product development can be a great cohesive
force, particularly when team members have some say in establishing the goals. It serves to get the key
players pulling in the same direction and gives them and the senior management team measures of the
degree of accomplishment. Goals should be set so that they are measurable; Achievable but
challenging; An accurate representation of the tasks that must be performed, and support the ultimate
objective of rapid and cost-effective development. Goals extend beyond the need to identify the real
requirements the product has to meet and to verify the ability of the product to meet those
requirements. They should be set so as to achieve a competitive edge and yet minimize any negative
impact to the organization. Goals can be set to achieve a wide variety of objectives. Some typical goals
designed for this purpose are:

1.2.6.7. Automotive Market Goals: These take the form of automotive market share, revenue and
profitability (by automotive market segment), revenue distribution following new product introduction
through product life cycle, automotive market share growth and distribution by product portfolio
components, etc.

2.2.6.7. New Product Portfolio: The percentage distribution of the new product development
(NPD) effort between products that fall into breakthrough, platform or incremental development
objectives, and the change in distribution as the business strategy evolves with time.

3.2.6.7. Design to Unit Production Cost (DTUPC): The purpose is to challenge the design
team to make cost-effective decisions. The process of setting these goals is to take the new product
cost target and allocate costs to the various subsystems and modules so as to continually estimate the
impact of design decisions on cost by managing to a cost budget. In this case, one must be careful not
to permit other costs within the organization to increase because of the decisions made to reduce
product specific costs.

4.2.6.7. Development Cycle Time (Time To Market): This has to be set with the goal of being
first to automotive market. The measurement of cycle time should also involve measurement of the
various phases of activity starting with birth of a concept through shipment of the first product. The
goal established would be progressively more difficult for succeeding products, within the context of a
continuing attempt to reduce development cycle time through improvements in the design and development process.

5.2.6.7. **Design Quality:** The objective in this case is to use information on existing process capabilities to predict or estimate the quality level at which the as designed product can be built, through preliminary and detail design phases, and through pilot production to full production. This tool helps the team make design decisions which minimize problems in manufacturing and assembling the product, and can lead to desired improvements in product design, materials and processes needed to achieve the target. It also helps minimize the “Cost of Quality,” which ultimately affects the bottom line. It reinforces the need for Design of Manufacturability (DFM) and Design for Assembly (DFA) disciplines

6.2.6.7. **Variety Effectiveness:** These goals would be set with the intent of using parts, materials, functional modules, software functionality, etc. that already exist in other related products within the product line or across product lines. Such goals direct the automaker towards greater variety effectiveness and reduced total costs as mentioned in ‘Automotive Market Goals’

7.2.6.7. **Percentage Reuse:** Several metrics could result from the desire to achieve variety effectiveness. Metrics examples include tracking standard parts, common product modules, subassemblies and software modules reused in new products as a percentage of the total count of those criteria. Goals established early in the development process establish a target to be achieved by the product development team.

8.2.6.7. **Expense Budget:** In spite of its being a nonrecurring cost, the expense budget is an important element in containing development costs through the management of internal and external resources applied to the development task.

9.2.6.7. **Engineering Productivity:** This can take the form of engineering hours per project tracked by project type (breakthrough, platform or incremental). Actual hours versus planned hours is another useful measure

8. **New Product Development (NPD) and its Effective Factors:**

New product development (NPD) is an interdisciplinary activity (DAVILA, 2000) including marketing management, organizations, engineering design, operations management and requires contributions from nearly all the functions of an enterprise, whether it is an upgrade (an improvement of an existing product) or a new concept either to the company or to the market. One emerging area of research in the literature is the impact of internal firm organizational variables on the ability of
firms to minimize the time and cost of new product development (NPD). Thus, time and cost are two important factors in new product development (NPD) process. New product development (NPD) is also defined as the transformation of a market opportunity and a set of assumptions about product technology into a product available for sale (Buyukozkan, et al., 2004). Case studies of actual innovations showed that the marketplace played a major role in stimulating the need for new and improved products (J. Poolton et al., 1998). Market predictability, marketing skills and resources, recognition of long-term relationships, cross functional interface, compatibility emphasis, cost and service emphasis and leadership style of project manager are some other factors introduced by M. Song, (2006) for new product development (NPD). The reduction of new product development (NPD) cycle time may create relative advantages in market share, profit, and long-term competitiveness (P. Afonso et al., 2008). Empirical results suggest that successful projects differ from unsuccessful projects in project environment, skills and resources, project leadership, strategic fit, efficient new product development (NPD) process, and effective product-positioning strategies (M. Song, 2006). Additionally, project environments including nature of market and level of competition play an important role in project success and failure. Suppliers have also a large and direct impact on the cost, quality, technology, and time to market of new products (M. Primo, et al., 2002). The project leader is another factor critically affects both the process performance and the product effectiveness and facilitates communication between the project team and senior management. New product development (NPD) process proficiency and the role and commitment of senior management were key distinguishers between success and failure. In addition, good communication has been identified as critical to innovative success (M. Song, 2006). Client supplier collaboration is rather a complicated and difficult issue. Clients (some authors call it buyers) and suppliers are facing a number of problems in managing collaborative new product development (NPD) (P. Lam, K. Chin, 2005). Good planning is taken to include well-cost project control procedures, production planning and control, and the readiness to predict meaningful sales forecasts for new products. Good after-sales service and providing a good technical service to customers is also recognized as a factor that can cause major shifts in new product markets, especially in those industries where loss of service entails lost revenue (Rothwell, 1977). The importance of cumulative know-how is also critical to success (J. Poolton et al., 1998). A life cycle view of a product encompasses all activities related to new product development (NPD) such as market analysis, manufacturing, design, service / maintenance, recycling of materials, packaging, distribution and many others (J. Hohenegger, et al., 2007). The main factors...
affected on new product development (NPD) process obtained from other research are summarized in Figure No. 2.

Conclusion

This paper presents a high level overview and justification for analysis for engineering and launching the new product development (NPD) process to gain competitive advantage in automotive industry. The objective is to achieve a more responsive and flexible value stream, which maximizes value and minimizes the occurrence of errors and defects. Guidelines and recommendations have been provided along with a framework for automaker and its team organization. The range of methods and tools described for achieving a successful new product design on the first attempt are adaptable by any organization willing to invest time and energy in enabling such a change and gain confidence to make the transition. The ultimate goal is to satisfy or even delight the customer base with the right product variety, at the right time, at a price the customer believes is worth the investment.

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Figure No.1: Organization Form
Weak Team Leader

General Manager

Marketing  Engineering  Materials  Manufacturing  Quality  Sales

Team leader
Validating Volatility Models on NSE

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ABSTRACT

Pricing in mathematical finance often involves taking expected values under different equivalent measures. Different volatility estimators and models have been proposed in the literature to measure volatility of asset returns. In this paper, we study the application of ARCH-GARCH models on Indian capital markets using time-series data of S&P CNX Nifty, a value-weighted index of 50 stocks traded on the National Stock Exchange (NSE), Mumbai by testing the model on historical returns of the Index and predicting volatility for the future.

INTRODUCTION

National Stock Exchange

The Indian Capital Market is one of the oldest capital markets in Asia which evolved around 200 years ago. To inject an international standard to the Indian Stock Market the National Stock Exchange was started in 1992 by the Industrial Development Bank of India, Industrial Credit and Investment Corporation of India, Industrial Finance Corporation in India, all Insurance Corporations and the selected commercial banks. The trading members and the participants constitute the players in the national Stock Exchange.

The following are the advantages of the National Stock Exchange over the traditional exchanges:

- The NSE basically integrates the stock market trading network across the nation.
- The investors have the freedom to trade from any part of the nation at the same price.
- Greater operational efficiency and informational efficiency can wipe out the delays in communication, late payments and the malpractices that are common in the traditional trading grounds.

Stock market volatility

Financial crises in the last decade have revealed that financial asset price volatility has the potential to undermine financial stability. Available empirical evidence indicates that financial stability is endangered more by sudden shifts in volatility rather than by a sustained increase in the level of volatility. Financial market volatility can have a wide repercussion on the economy as a whole. There is clear evidence of the important link between financial market uncertainty and public confidence. Policy makers therefore rely on market estimates of volatility as a barometer of the vulnerability of financial markets. The existence of excessive volatility or “noise” also undermines the usefulness of stock prices as a “signal” about the true intrinsic value of a firm, a concept that is core to the paradigm of informational efficiency of markets. Further, volatility
estimation and forecasting have become a compulsory risk–management exercise for economies and many financial institutions around the world. Understanding volatility is therefore central to risk management in an economy.

ARCH-GARCH Models

The autoregressive conditional heteroskedastic (ARCH) model recognizes the temporal dependence in the second moment of the stock returns and exhibits a leptokurtic distribution for the unconditional errors from the stock returns generating process. This model was introduced by Engle (1982) and generalised by Bollerslev (1986, 1987) and Engle, Lilien and Robins (1987). Examining the descriptive validity of these models, French, Schwert and Stanbaugh (1987) find that the generalised autoregressive conditional heteroskedastic-in-mean (GARCH-M) model is an attractive representation of daily stock return behaviour, successfully capturing effects of time-varying volatility on a stock’s expected return.

The distinctive feature of the GARCH(1,1) model is that it recognizes volatilities and correlations are not constant. During some periods, a particular volatility or correlation may be relatively low, whereas during other periods it may be relatively high. The models attempt to keep track of the variations in the volatility or correlation through time.

OBJECTIVES

1) To study the ARCH/GARCH Model to measure the volatility having most recent observation of returns and the variance rate
2) To apply the ARCH/GARCH Model on S&P CNX NIFTY and find out the long run variance rate and compare the viability of the model to forecast future volatility with realized volatility.

In this paper we are applying GARCH (1,1) model to the 3 year data set of S&P CNX NIFTY to find out the long run variance rate for 3 years and predict future volatility based on the long run variance rate. We would be using statistical tools like EViews for estimating GARCH (1,1) parameters and autocorrelation.

LITERATURE REVIEW

The article written by Amita Batra examines the time variation in volatility in the Indian stock market during 1979-2003 on account of the process of financial liberalization in India. Asymmetric GARCH methodology augmented by structural change analysis is used to identify sudden shifts in monthly data of stock price volatility and the nature of events that cause these shifts in volatility.

The paper on ‘The Use of ARCH/GARCH Models in Applied Econometrics’ by Robert Engle focuses on the use of ARCH and GARCH Models in various applications to measure the volatility. Further, it gives an example of the model applied in the concept of Value at Risk. Finally, it covers with the various extensions of the ARCH/GARCH models for higher order data etc.

The study by Ray Yeutien Chouconfirms the existence of changing equity premiums in the US during 1962-1985 through study of volatility persistence and changing risk premium using the univariate GARCH-M model.
According to Tim Bollerslev, Speculative price changes and rates of return tend to be uncorrelated over time but characterized by volatile periods. The standardized t-distribution fails to take account of temporal dependence and the ARCH & GARCH models with conditionally normal errors do not fully capture the leptokurtosis.

‘The GARCH Option Pricing Model’ written by Jin-Chuan Duan explains underpricing of many options, low-volatility securities and short-maturity options. The GARCH options price model also helps in delta hedging i.e. in low-variance state delta hedging calls for smaller option position and vice versa.

The article by Ajay Pandey compares the performance of conditional volatility models (ARCH & GARCH) to unconditional volatility models (Extreme Value estimators). According to him, while conditional volatility models perform well in estimating volatility for the past in terms of bias, extreme-value estimators based on observed trading range perform well on efficiency criteria.

According to G. Andrew Karolyi, magnitude and persistence of the return innovations that originate in any market and that transmit to the other market depend importantly on how the cross-market dynamics in the conditional volatilities of the respective markets are modelled. Investment barriers related to differential accounting disclosure standards, foreign ownership restrictions and tax considerations are important for understanding the changes in stock prices.

The paper on ‘Correlations in Price Changes and Volatility across International Stock Markets’ states that ARCH GARCH Models can be used to find out the impact of one stock market volatility on another. Assuming constant growth over a period of time is logically incorrect because of real time stock price movements.

**ESTIMATING VOLATILITY**

Define \( \sigma_n \) as the volatility of a market variable on day \( n \), as estimated at the end of day \( n - 1 \). The square of the volatility, \( \sigma_n^2 \), on day \( n \) is the variance rate. Suppose that the value of the market variable at the end of day \( i \) is \( S_i \). The variable \( u_i \) is defined as the continuously compounded return during day \( i \) (between the end of day \( i - 1 \) and the end of day \( i \)).

An unbiased estimate of variance rate per day, using the most recent \( m \) observations on the \( u_i \) can be calculated using the formula,

\[
\sigma^2 = \frac{1}{m-1} \sum_{i=1}^{m} (u_i - \mu)^2
\]

Where,
\[ u = \text{mean} \]

For the purposes of monitoring daily volatility, the formula in the above equation is usually changed in a number of ways:

1. \( u_i \) is defined as the percentage change in the market variable between the end of day \( i - 1 \) and the end of day \( i \)

\[
u_i = \frac{S_i - S_{i-1}}{S_{i-1}}
\]

2. \( u_i \) is assumed to be zero.
3. $m - 1$ is replaced by $m$.

Simplified formula can be written as,

$$\sigma^2 = \sum_{i=1}^{m} \mu_n - i^2$$

The above equation gives equal weight to all the returns. Our objective is to estimate the current level of volatility $\sigma_n$. It therefore makes sense to give more weight to recent data. A model that does this is

$$\sigma^2 = \sum_{i=1}^{m} \alpha_i \mu_n - i^2$$

The variable $\alpha_i$ is the amount of weight given to the observation $i$ days ago; they are positive and should sum up to unity.

An extension of the idea in the above equation is to assume that there is a long-run average variance rate and that this should be given some weight. This leads to the model that takes the form:

$$\sigma^2 = \gamma V_L + \sum_{i=1}^{m} \alpha_i \mu_n - i^2$$

where $V_L$ is the long-run variance rate and $\gamma$ is the weight assigned to $V_L$. All the weights in the above equation must sum to unity. This is known as ARCH (m) model.

Now let us take a look at some of the models derived from this:

**THE EXPONENTIALLY WEIGHTED MOVING AVERAGE MODEL (EWMA)**

The exponentially weighted moving average (EWMA) model is a particular case of the ARCH model where the weights $\alpha_i$ decreases exponentially as we move back through time. Specifically, $\alpha_i + 1 = \lambda \alpha_i$ where $\lambda$ is a constant between 0 and 1. The formula is given as:

$$\sigma^2 = \lambda \sigma_{n-1}^2 + (1 - \lambda) \mu_{n-1}^2$$

The EWMA approach is designed to track changes in the volatility. Suppose there is a big move in the market variable on day $n - 1$, so that $\mu_{n-1}$ is large. From the above equation this causes the estimate of the current volatility to move upward. The value of $\lambda$ governs how responsive the estimate of the daily volatility is to the most recent daily percentage change. A low value of $\lambda$ leads to a great deal of weight being given to the $\mu_{n-1}$ when $\sigma_n$ is calculated. In this case, the estimates produced for the volatility on successive days are themselves highly volatile. A high value of $\lambda$ (i.e., a value close to 1.0) produces estimates of the daily volatility that respond relatively slowly to new information provided by the daily percentage change.

In our research we would be using the value of $\lambda = 0.9$ for updating daily volatility estimates. We found that across a range of different market variables, this value of $\lambda$ gives forecasts of the variance rate that come closest to the realized variance rate.

**THE GARCH(1,1) MODEL**

The difference between the GARCH(1,1) model and the EWMA model is that we consider the long-run average variance rate as well as $\sigma_{n-1}$ and $\mu_{n-1}$ for calculating variance rate $\sigma_n^2$ in GARCH(1,1) and thus volatility $\sigma_n$. 

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The equation for GARCH(1,1) is:

\[ \sigma_n^2 = \gamma V_L + \alpha u_{n-12}^2 + \beta \sigma_{n-12}^2 \]

where,
\[ \gamma = \text{weight assigned to long-run average variance rate} V_L \]
\[ \alpha = \text{weight assigned to } u_{n-12}^2 \]
\[ \beta = \text{weight assigned to } \sigma_{n-12}^2 \]

All the above weights should sum to unity.
\[ \gamma + \alpha + \beta = 1 \]

The EWMA model is a particular case of GARCH(1,1) where
\[ \gamma = 0 \]
\[ \alpha = 1 - \lambda \]
\[ \beta = \lambda \]

The "(1,1)" in GARCH(1,1) indicates that \( \sigma_n^2 \) is based on the most recent observation of \( u_2 \) and the most recent estimate of the variance rate.

Setting \( \omega = \gamma V_L \), the GARCH(1,1) model can also be written as,

\[ \sigma_n^2 = \omega + \alpha u_{n-12}^2 + \beta \sigma_{n-12}^2 \]

This is the form of the model that is usually used for the purposes of estimating the parameters. Once \( \omega, \alpha, \) and \( \beta \) have been estimated, we can calculate \( \gamma \). The long-term variance \( V_L \) can then be calculated as \( \omega / \gamma \). For a stable GARCH(1,1) process we require \( \alpha + \beta < 1 \). Otherwise the weight applied to the long-term variance is negative.

**ANALYSIS AND FINDINGS**

In this paper, we examine the daily stock price activity of S&PCNX Nifty over the three year period i.e. October 1, 2007 to September 30, 2010. S&P CNX Nifty is a well diversified 50 stock index accounting for 21 sectors of the economy. It is used for a variety of purposes such as benchmarking fund portfolios, index based derivatives and index funds.
The descriptive data of the S&P CNX Nifty is as given below along with the histogram:
The mean and the median of the data comes out to be negative and the difference between the both is relatively high.

The Standard deviation of the data is very high which is around 1%. The only reason for this was a sudden drop in the NIFTY index during some of the slack periods where the index had shown a great dip or rise within a duration of 1 month. E.g. NIFTY rose from 5068.95 on 1/10/2007 to 5900.65 on 31/10/2007, a drop from 6144.35 on 1/1/2008 to 5137.45 on 31/01/2008, etc.

A negative skew indicates that the tail on the left side of the probability density function is longer than the right side and the bulk of the values (including the median) lie to the right of the mean. This indicates that NIFTY returns are more on the higher side and it has relatively few low values.

Kurtosis is a statistical measure used to describe the distribution of observed data around the mean. It is sometimes referred to as the "volatility of volatility." In our case the kurtosis comes out to be around 11.5% which is low and it portrays a chart with skinny tails and a distribution concentrated toward the mean.

**ESTIMATING GARCH(1,1) PARAMETERS**

The GARCH(1,1) equation is given as

$$\sigma_i^2 = \omega + \alpha u_{i-1}^2 + \beta \sigma_{i-1}^2$$

Now, the question arises that what should be the weights to be assigned to the parameters $\omega$, $\alpha$ and $\beta$. Thus, we consider the maximum likelihood method to estimate the parameters. We define $v_i = \sigma_i^2$ as the variance estimated for day $i$. Assuming that the probability distribution of $u_i$ conditional on the variance is normal. A similar analysis to the one shows the best parameters are the ones that maximize the following equation:

$$i = lm2\pi v_i \exp -u_i^2/v_i$$

Taking logarithms, we see that this is equivalent to maximizing

$$i = lm - \ln v_i - u_i^2/v_i$$

Hence, we need to find the values of the parameters $\omega$, $\alpha$ and $\beta$ so that we get the maximum value for the above equation. We used Eviews Software to get the estimated values of $\omega$, $\alpha$ and $\beta$. The summary of the same is given below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Day i</th>
<th>$S_i$</th>
<th>$U_i = (S_i - S_{i-1})/S_{i-1}$</th>
<th>$V_i = \sigma_i^2$</th>
<th>$-\ln()$ - /</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/1/2007</td>
<td>1</td>
<td>5068.95</td>
<td></td>
<td>0.027984</td>
<td></td>
</tr>
<tr>
<td>10/3/2007</td>
<td>2</td>
<td>5210.80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The International Journal of Business and Management Research  Volume 5, Number I
Table 1: Estimated values of $\omega$, $\alpha$ and $\beta$

Trial Estimates of GARCH Parameters
$
\omega = 0.0000106, \ \alpha = 0.135194, \ \beta = 0.855588
$

Figure 3: Trial Estimates of GARCH Parameters

The graphs for conditional variance and standard deviation for Nifty changed over the 3 year period is given below. Most of the time, the volatility was between 1% and 3% per day, but volatilities over 4% were experienced during some period.
In our case, the optimal values of the parameters turn out to be

\[ \omega = 0.0000106, \alpha = 0.135194, \beta = 0.855588 \]

and the maximum value of the function in equation \(-\ln(\nu_i) - \frac{u_i^2}{\nu_i}\) is 4891.0539. The numbers shown in the GARCH parameter table were calculated on the final iteration of the search for optimal \(\omega\), \(\alpha\) and \(\beta\).

The long term variance rate, \(V_L\), is

\[ \omega(1-\alpha-\beta) = 0.00115 \]

Therefore, the long term volatility is \(0.00115 = 0.033991\) or 3.399%, per day.

**HOW GOOD IS GARCH MODEL?**

The assumption underlying the GARCH model is that volatility changes with the passage of time. During some periods volatility is relatively high; during other periods it is relatively low. To put this in another way, when \(u_i^2\) is high, there is a tendency for \(u_{i+1}^2\), \(u_{i+2}^2\),... to be high; when \(u_i^2\) is low, there is a tendency for \(u_{i+1}^2\), \(u_{i+2}^2\),... to be low. We can test how true this is by examining the autocorrelation structure of the \(u_i^2\).

We assume that \(u_i^2\) do exhibit autocorrelation. If a GARCH model is working well, it should remove the autocorrelation. We can test whether it has done so by considering the autocorrelation structure for the variables \(u_i^2/\sigma_i^2\). If these show very low autocorrelation, our model for \(\sigma_i^2\) has succeeded in explaining autocorrelations for \(u_i^2\).

<table>
<thead>
<tr>
<th>Time Lag</th>
<th>Autocorrelation for (U_i^2)</th>
<th>Autocorrelation for (U_i^2/\sigma_i^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.063</td>
<td>-0.007</td>
</tr>
<tr>
<td>2</td>
<td>0.104</td>
<td>-0.021</td>
</tr>
<tr>
<td>3</td>
<td>0.061</td>
<td>-0.018</td>
</tr>
<tr>
<td>4</td>
<td>0.123</td>
<td>0.020</td>
</tr>
</tbody>
</table>

The International Journal of Business and Management Research  Volume 5, Number 1
Table 2: Autocorrelation before and after the use of GARCH model

<table>
<thead>
<tr>
<th>Lag</th>
<th>Autocorrelation</th>
<th>Autocorrelation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0.081</td>
<td>-0.018</td>
</tr>
<tr>
<td>6</td>
<td>0.058</td>
<td>-0.017</td>
</tr>
<tr>
<td>7</td>
<td>0.095</td>
<td>-0.014</td>
</tr>
<tr>
<td>8</td>
<td>0.043</td>
<td>-0.022</td>
</tr>
<tr>
<td>9</td>
<td>0.071</td>
<td>-0.027</td>
</tr>
<tr>
<td>10</td>
<td>0.125</td>
<td>0.016</td>
</tr>
<tr>
<td>11</td>
<td>0.088</td>
<td>0.002</td>
</tr>
<tr>
<td>12</td>
<td>0.035</td>
<td>-0.004</td>
</tr>
<tr>
<td>13</td>
<td>0.047</td>
<td>-0.020</td>
</tr>
<tr>
<td>14</td>
<td>0.038</td>
<td>-0.025</td>
</tr>
<tr>
<td>15</td>
<td>0.067</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The table above shows results for the NIFTY data for a 3 year period. The first column shows the lags considered when the autocorrelation is calculated. The second shows autocorrelations for $u_i^2$; the third shows autocorrelations for $u_i^2/\sigma_i^2$.

We found out that the autocorrelations are positive for $u_i^2$ for all lags between 1 and 15. In the case of $u_i^2/\sigma_i^2$, some of the autocorrelations are positive and some are negative. They are all much smaller in magnitude than the autocorrelations for $u_i^2$.

Thus, the GARCH model appears to have done a good job in eliminating the effect of autocorrelation.

5.1. FORECASTING FUTURE VOLATILITY USING GARCH (1,1)

The variance rate estimated at the end of day $n-1$ for day $n$, when GARCH (1,1) is used, is

$$\sigma_n^2=(1-\alpha-\beta)V_L+\alpha u_{n-1}^2+\beta \sigma_{n-1}^2$$

so that

$$\sigma_n^2-V_L=\alpha(u_{n-1}^2-V_L)+\beta(\sigma_{n-1}^2-V_L)$$

On day $n$ + t in the future,

$$\sigma_{n+t}^2-V_L=\alpha(u_{n+t-1}^2-V_L)+\beta(\sigma_{n+t-1}^2-V_L)$$

The expected value of $u_{n+t-1}^2$ is $\sigma_{n+t-1}^2$. Hence,

$$E\sigma_{n+t}^2-V_L=\alpha+\beta E[\sigma_{n+t-1}^2-V_L]$$

where E denotes expected value. Using this equation repeatedly yields

$$E\sigma_{n+t}^2-V_L=\alpha+\beta E[\sigma_n^2-V_L]$$

Or

$$E\sigma_{n+t}^2=V_L+\alpha+\beta E[\sigma_n^2-V_L]$$
This equation forecasts volatility on day \( n + t \) using the information available at the end of day \( n - 1 \). In the EWMA model, \( \alpha + \beta = 1 \) and its equation shows that the expected future variance rate equals the current variance rate. When \( \alpha + \beta < 1 \), the final term in the equation becomes progressively smaller as \( t \) increases. Figure below shows the expected path followed by the variance rate for situations where the current variance rate is different from VL.

![Figure 6](image)

![Figure 7](image)

Our forecast of the future variance rate tends towards VL as we look further and further ahead. This analysis emphasizes the point that we must have \( \alpha + \beta < 1 \) for a stable GARCH (1,1) process. When \( \alpha + \beta > 1 \), the weight given to the long term average variance is negative and the process is mean fleeing rather than mean reverting.

The table below provides the volatility estimates for a 90 day period based on the above mentioned formula:

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>( E[\sigma_{n+t}^2] )</th>
<th>SD(_t)</th>
<th>Date</th>
<th>Day</th>
<th>( E[\sigma_{n+t}^2] )</th>
<th>SD(_t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/1/2010</td>
<td>1</td>
<td>0.00013915</td>
<td>0.011796</td>
<td>11/12/2010</td>
<td>31</td>
<td>0.000384</td>
<td>0.019604</td>
</tr>
<tr>
<td>10/4/2010</td>
<td>2</td>
<td>0.00014847</td>
<td>0.012185</td>
<td>11/15/2010</td>
<td>32</td>
<td>0.000391</td>
<td>0.019784</td>
</tr>
<tr>
<td>10/5/2010</td>
<td>3</td>
<td>0.00015770</td>
<td>0.012558</td>
<td>11/16/2010</td>
<td>33</td>
<td>0.000398</td>
<td>0.01996</td>
</tr>
<tr>
<td>10/6/2010</td>
<td>4</td>
<td>0.00016685</td>
<td>0.012917</td>
<td>11/17/2010</td>
<td>34</td>
<td>0.000405</td>
<td>0.020132</td>
</tr>
<tr>
<td>10/7/2010</td>
<td>5</td>
<td>0.00017591</td>
<td>0.013263</td>
<td>11/18/2010</td>
<td>35</td>
<td>0.000412</td>
<td>0.020302</td>
</tr>
<tr>
<td>10/8/2010</td>
<td>6</td>
<td>0.00018489</td>
<td>0.013597</td>
<td>11/19/2010</td>
<td>36</td>
<td>0.000419</td>
<td>0.020469</td>
</tr>
<tr>
<td>10/11/2010</td>
<td>7</td>
<td>0.00019378</td>
<td>0.013921</td>
<td>11/22/2010</td>
<td>37</td>
<td>0.000426</td>
<td>0.020633</td>
</tr>
<tr>
<td>10/12/2010</td>
<td>8</td>
<td>0.00020260</td>
<td>0.014234</td>
<td>11/23/2010</td>
<td>38</td>
<td>0.000432</td>
<td>0.020794</td>
</tr>
<tr>
<td>10/13/2010</td>
<td>9</td>
<td>0.00021133</td>
<td>0.014537</td>
<td>11/24/2010</td>
<td>39</td>
<td>0.000439</td>
<td>0.020952</td>
</tr>
<tr>
<td>10/14/2010</td>
<td>10</td>
<td>0.00021998</td>
<td>0.014832</td>
<td>11/25/2010</td>
<td>40</td>
<td>0.000446</td>
<td>0.021108</td>
</tr>
<tr>
<td>10/15/2010</td>
<td>11</td>
<td>0.00022855</td>
<td>0.015118</td>
<td>11/26/2010</td>
<td>41</td>
<td>0.000452</td>
<td>0.021261</td>
</tr>
<tr>
<td>10/18/2010</td>
<td>12</td>
<td>0.00023705</td>
<td>0.015396</td>
<td>11/29/2010</td>
<td>42</td>
<td>0.000458</td>
<td>0.021412</td>
</tr>
<tr>
<td>10/19/2010</td>
<td>13</td>
<td>0.00024546</td>
<td>0.015667</td>
<td>11/30/2010</td>
<td>43</td>
<td>0.000465</td>
<td>0.02156</td>
</tr>
</tbody>
</table>
We observe that the 5 day volatility is 1.3263%, 10 day volatility is 1.4832%, 30 day volatility is 1.9422% and 60 day volatility is 2.3762%. The expected volatility tends to close the long run average variance as the time period increases. This is because the value of $\alpha + \beta = 0.9907$ which is less than 1. If we consider the expected variance rate in 100 days

$$\sigma_{n+100} = 0.00074589$$

Therefore, $\sigma_{n+100} = 0.00074589 = 0.02731 = 2.731\%$ which is closer to the long run average volatility of 3.399%.

### 1.3. VOLATILITY COMPARISON FOR SMALLER PERIODS

Since the 3 year period of NIFTY data consists of few patches of high frequency data, we break the 3 year period into 3 periods of one year to get the short term (1 year) volatility behaviour of NIFTY. This exercise is mainly important in comparing performance of various volatility estimators when there is asymmetry in the volatility in the period used. The results for the estimated GARCH (1,1) for each period is given in the table below:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.000139</td>
<td>0.002389</td>
<td>0.001292</td>
</tr>
<tr>
<td>$\omega$</td>
<td>0.0000574</td>
<td>0.0000596</td>
<td>0.00000686</td>
</tr>
</tbody>
</table>
Table 4: Estimated GARCH (1,1) for each period

<table>
<thead>
<tr>
<th></th>
<th>0.141721</th>
<th>0.089394</th>
<th>0.104195</th>
</tr>
</thead>
<tbody>
<tr>
<td>α</td>
<td>0.752255</td>
<td>0.83907</td>
<td>0.835807</td>
</tr>
<tr>
<td>β</td>
<td>0.106024</td>
<td>0.071536</td>
<td>0.059998</td>
</tr>
<tr>
<td>γ</td>
<td>0.000541387</td>
<td>0.000833147</td>
<td>0.000114337</td>
</tr>
<tr>
<td>V</td>
<td>0.000541387</td>
<td>0.000833147</td>
<td>0.000114337</td>
</tr>
</tbody>
</table>

Here, the value of $\omega$ has been significant in the first 2 periods, however, in the period Oct 2009 to Sep 2010, $\omega$ value has been insignificant leading to the low value of $\gamma$ and thus considerable change in the volatility behaviour which is insignificant when compared to the volatility of the complete 3 year period (2007 to 2010).

Moreover, the data set in the first two periods had few smaller periods of high frequency data which has resulted in the higher value of $V_L$. Specifically, the period from 1st Oct 2008 to 30th Sep 2009 where Nifty declined by 40% in first 6 months and then increased by 100% in the next 6 months. This led to the long run variance rate for that period to record at 0.000833 which is quite higher than the long run variance rate of the other two periods.

Mean Reversion

The GARCH (1.1) model recognizes that over the time variance tends to get pulled back to a long run average level of $V_L$. The amount of weight assigned to $V_L$ is $\gamma = 1 - \alpha - \beta$. The GARCH (1,1) is equivalent to a model where the variance $V$ follows the stochastic process

$$dV = aV_L - V dt + \xi V dz$$

Where time is measured in days, $a = 1 - \alpha - \beta$ and $\xi = a2$. This is mean reverting model. The variance has a drift that pulls its back to $V_L$ at rate $a$. When $V > V_L$, the variance has a negative drift; when $V < V_L$, it has a positive drift. Superimposed on the drift is the volatility $\xi$.

Due to higher volatility periods of Oct 2007 to Sep 2009, the overall volatility of the 3 year NIFTY data has been spikier and less persistent due to high value of $\alpha$ of 0.135194 and low value of $\beta$ of 0.855588. In all the periods and the entire data set the value of $\alpha + \beta$ has been less than 1. This indicates that volatility is mean reverting.

CONCLUSION

This paper has considered most of the issues and critical factors for designing the neural network model and has tested the performance of each of the structures at various historic periods of the trading sessions of the Indices. A rigorous trial and error method is employed in selecting each of the features of the network structure. From the above research study, we conclude that the conditional volatility
models like ARCH/GARCH are better than traditional estimators as they are able to get rid of the internal errors that traditional estimators are not able to do. Moreover, the GARCH (1,1) model when applied on the S&P CNX Nifty for past 3 years have different long run variance rate when compared to the shorter periods within the same 3 year data set. The GARCH model has been able to perform well in estimating volatility for the past in terms of bias. The GARCH model also helps to predict the future volatility of the market (NIFTY in this case) with the help of long-run variance rate. It also helps in eliminating the effect of autocorrelation for returns after the application of GARCH model.

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Employees Retention Strategies: A Study of Selected Organized Retailer in Lucknow City, Uttar Pradesh

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ABSTRACT

Retail is India's largest industry. A number of factors are driving India's retail market. These includes increase in the young working population, hefty pay-packages, nuclear families in urban areas, increasing working-women population, increase in disposable income and customer aspiration, increase in expenditure for luxury items, and low share of organized retailing. The retail industry faces the difficult and costly challenge of recruiting and retaining the best talent. There are many factors that may limit the ability of retailers to keep valued employees, and it is essential to understand what employees’ value, that can cause them to stay and perform well. The rapid growth of retail sector is the major concern of employee’s retention problem because employees now have immense opportunity in their service period. Youngsters join the retail industry at lower salaries, get some much-needed experience and then move on to better jobs or back to school. The objective of this paper is to find out the various reasons why employees leave the job and suggest recommendation for employees’ retention in retail sector. With special reference to study of selected organized retailer in Lucknow city, Uttar Pradesh.

KEYWORDS: FDI, Organized retailing, Retailing, Retention.

INTRODUCTION

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2

9
The Indian retail industry is growing at a tremendous rate with various industry players entering the market as they predict a rise in the retail sector. The industry is having currently 10% of GDP\(^1\) and 8% of employment and is estimated to be the fifth largest in global retail industry (A T Kearney’s 2009). But only 3% to 4% of total retail business is currently in organized sector. The rest is in the hands of innumerable small and unorganized sector players.

Indian retailing is not waiting for the size of business. The challenge lies on identifying the key drivers that steer the Indian consumers’ perception and shopping behaviour. The reality is that every retailer has to ‘understand his customers’ more discerningly than ever before and make strategic choices to pursue the right target (customer) with the right proposition (Banerjee, Banerjee 2000).

The Government of India has already opened up 51% FDI\(^2\) in single brand retail outlets since 2006. And as the government is in a process to initiate a second phase of reforms, it is cautiously exploring the avenues for opening up various other luxury categories and sports goods before opening the multi-brand segment (Vedamani, 2008).

The organized retail industry had been attracting young talents. However, faced with high levels of stress and the lack of a proper career plan, many young professional are leaving the industry. Turnover is a problem that the organized retailers are currently facing at a huge scale. Though it is experienced at all levels, the big retail brands are facing 40-60% overall turnover rate and 20-30% turnover rate at junior and middle levels. Frontline staff turnover in retail is around 20-30%. The retail managers are of the opinion that on-job training are useful in building a company culture and hence help in better retention rates. (Shabnam, Paul 2008)

**Employee retention** refers to the efforts by which employers attempt to retain employees in their workforce. In an organizational setting, the goal of employers is to decrease employee turnover, training costs, and loss of talent. By implementing lessons learned from key organizational behavior concepts employers can improve retention rates and decrease the associated costs of high turnover.

One of the primary challenges in retail employment is the issue of retention. Best practices in recruitment encourage employers to advertise these benefits to prospective employees in all of their

---

1. Gross Domestic Product
2. Foreign Direct Investment
campaigns for talent. Entry-level salaries for employees in retail sector are in the range of Rs 3,000-4,800 per month, according to industry estimates. In comparison, entry-level employees in the BPO sector earn an average of Rs 15,000 a month is also one of the prime reason for attrition in retail. (Taurakhia, Dec 4, 2007)

Employee Retention involves taking measures to encourage employees to remain in the organization for the maximum period of time. Retailers are facing a lot of problems in employee retention these days. Hiring knowledgeable people for the job is essential for retailers. But retention is even more important than hiring. There are huge opportunities for a talented person. There are many competitors which are looking for such workforce. If an employee is not satisfied by the job he’s doing, he may switch over to some other more suitable job. Hiring and keeping good employees substantially reduces costs for retailers, which in turn affects their competitiveness and profitability. The failure to hire and retain qualified people is costly in a number of ways. In today’s environment it becomes very important for organizations to retain their employees.

According to Kathy Mance (Mance K. (2011)), Executive Director of NRF, the National Retail Federation Foundation develops programs and encourages retailers to make young people more aware of the less visible career paths in a retail environment.

**RESEARCH METHODOLOGY**

For this research, we choose the descriptive research which carried out with specific objective and hence it results in definite conclusions. This research tries to describe the characteristics of the respondents in relation to their attrition from their concerned organization. Systematic random sampling is suggested under this study, every item of the universe has an equal chance of inclusion in the sample. We would take a sample of 50 (five samples from each retailer). From the all the outlets of 10 organized retailers in the Lucknow city itself from the top retailers in India (source: *Indian Retail Report 2008*) and of course there availability Lucknow. The list of top 10 retailers in Lucknow is listed below:

<table>
<thead>
<tr>
<th></th>
<th>Pantaloon Retail (India) Ltd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Research Hypotheses

For this research there are three hypotheses:

(i) Employees who are satisfied with their organizational policy/climate will show increasing level of retention in organized retail organization.

(ii) Employees who are satisfied with their working condition/quality of work life will show increasing level of retention in organized retail organization.

(iii) Personal attributes (like higher studies, career growth, relocation etc.) will show decreasing level of retention level in organized retail organization.

Data Collection - The data were collected both from the primary and secondary source. For primary data we used structured questionnaire with open ended and close ended questions. The
respondents have to be responding on the 5 points Likert’s Scale. The scale converted into summated Likert’s scale for the calculation

**Data Analysis** - After the data are collected, proper tools and techniques should be used for classification and analysis of data. As we already classify the questionnaire in different heads so, it becomes easy to classify the raw data which comes under heads:

- Demographic information
- Organizational Policy/ Organizational Climate;
- Working condition/ Quality of work life;
- Personal attributes
- Personal Information

As the questionnaire is divided into different parts, parts A and D consists of descriptive questions or open ended questions and theses data are analyzed and presented with the help of bar graphs. And the hypotheses will be tested with the help of chi-square test on the parts B, C and D.

**Hypothesis Testing** – The next step of study is to test the hypothesis with the help of chi-square test and find out the relationship between variables. For this research we were categories the hypotheses in three forms:

I. Employees who are satisfied with their organizational policy and climate will show increasing level of retention in organized retail organization.

II. Employees who are satisfied with their working condition and quality of work life will show increasing level of retention in organized retail organization.
III. Personal attributes (like higher studies, career growth, relocation etc.) will show decreasing level of retention level in organized retail organization.

The conventional approach to hypotheses testing is to set up two hypothesis instead of one in such a way that if one hypothesis is true, the other is false. Alternatively, if one hypothesis is false or rejected, then the other is true or accepted.

I. These two hypothesis for organizational policy/ climate and retention:

(i) Null hypothesis – There is no association between the satisfactions with organizational policy/ climate and retention.

(ii) Alternative hypothesis - There is association between the satisfactions with organizational policy/ climate and retention.

\[ \chi^2 \text{ calculated } = 66.54 \]

Degree of freedom = \((R-1)(C-1)\)

\[ = (10-1)(3-1) \]

\[ = 18 \]

At 5% level of significance, the critical (tabulated) value of \(\chi^2\) for df (18) = 28.869

(As \(\chi^2\) calculated > \(\chi^2\) tabulated) Since the value of chi-square calculated is greater than the tabulated chi-square. Null hypothesis is rejected and alternative hypothesis is accepted. So, the conclusion is that there is relationship exist between satisfaction with organizational policy/ climate and retention.

II. For the working condition/ quality of work life there are two hypotheses:

(i) Null hypothesis – There is no association between the working conditions/ quality of work life and retention.
(ii) Alternative hypothesis - There is association between the working conditions/ quality of work life and retention.

As $\chi^2$ calculated = 24.18

Degree of freedom = (R-1) (C-1)

= (10-1) (3-1)

= 18

At 5% level of significance, the critical (tabulated) value of $\chi^2$ for df (18) = 28.869

(As $\chi^2$ calculated $< \chi^2$ tabulated) Since the value of chi-square tabulated is greater than the calculated chi-square. Null hypothesis is accepted and alternative hypothesis is rejected. So, the conclusion is that there is no relationship between work condition/ quality of work life and retention.

III. For the personal attributes there are also two hypotheses:

(i) Null hypothesis - There is no association between the personal attributes and retention.

(ii) Alternative hypothesis - There is association between the personal attributes and retention.

As $\chi^2$ calculated = 46.21

Degree of freedom = (R-1) (C-1)

= (10-1) (3-1)

= 18
At 5% level of significance, the critical (tabulated) value of \( \chi^2 \) for df (18) = 28.86

(As \( \chi^2 \) calculated > \( \chi^2 \) tabulated) Since the value of chi-square calculated is greater than the tabulated chi-square. Null hypothesis is rejected and alternative hypothesis is accepted. So, the conclusion is that there is relationship exists between personal attributes and retention.

Now, analysis of part A and F should be presented with the help of bar graphs.

1. **Age Of Respondents**

<table>
<thead>
<tr>
<th>Age of Respondents</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20</td>
<td>0</td>
</tr>
<tr>
<td>21-25</td>
<td>20</td>
</tr>
<tr>
<td>26-30</td>
<td>18</td>
</tr>
<tr>
<td>31-35</td>
<td>12</td>
</tr>
<tr>
<td>Above 40</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>

Figure 1: Bar Chart of Respondents Age

Table 1: Age of Respondents

2. **Gender Of Respondents**

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>34</td>
<td>16</td>
</tr>
</tbody>
</table>
3. **Marital Status Of Respondents**

<table>
<thead>
<tr>
<th>Married</th>
<th>Unmarried</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondents</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 3: Marital Status of Respondents

![Gender of Respondents](image)

Figure 3: Bar Chart of Respondents Gender

4. **Total Experiences Of Respondents**

<table>
<thead>
<tr>
<th>Total Experience</th>
<th>No. of Respondents</th>
</tr>
</thead>
</table>

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5. Experience In Present Organization

<table>
<thead>
<tr>
<th>Experience in Present Organization</th>
<th>No. of Respondents</th>
</tr>
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<tr>
<td>0-1 Year</td>
<td>14</td>
</tr>
<tr>
<td>1-3 Years</td>
<td>24</td>
</tr>
<tr>
<td>3-5 Years</td>
<td>10</td>
</tr>
<tr>
<td>More than 5 Years</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Figure 5: Bar Chart of Respondents Experience in Present Organization

Table 5: Respondents Experience in Present Organization
6. **Qualifications Of Respondents**

<table>
<thead>
<tr>
<th>Qualification</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Graduation</td>
<td>9</td>
</tr>
<tr>
<td>Graduation</td>
<td>16</td>
</tr>
<tr>
<td>Post Graduation</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>
7. *Present Employability Of Respondents*

<table>
<thead>
<tr>
<th>Response</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>28</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
</tr>
<tr>
<td>Can’t say</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 6: Academic & Professional Qualification

Figure 6: Bar Chart of Academic & Professional Qualification

8. *Enhancing Skills/Qualification*

<table>
<thead>
<tr>
<th>Degree of Employability</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>12</td>
</tr>
<tr>
<td>Low</td>
<td>0</td>
</tr>
<tr>
<td>Moderate</td>
<td>28</td>
</tr>
<tr>
<td>Can’t say</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 7: Academic & Professional Qualification
Table 8: Respondents Response on Enhancing Skill

<table>
<thead>
<tr>
<th>Personal Income</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs. 1-3 lacs</td>
<td>38</td>
</tr>
<tr>
<td>Rs. 3-6 lacs</td>
<td>12</td>
</tr>
<tr>
<td>Rs. 6-9 lacs</td>
<td>0</td>
</tr>
<tr>
<td>Rs. 9 lacs &amp; above</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Figure 8: Bar Chart of Respondents Response on Enhancing Skill

9. **Personal Income**
10. **Family Income**

Figure 9: Bar Chart of Respondents Response on Personal Income

<table>
<thead>
<tr>
<th>Family Income</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rs. 1-5 lacs</td>
<td>30</td>
</tr>
<tr>
<td>Rs. 5-10 lacs</td>
<td>18</td>
</tr>
<tr>
<td>Rs. 10-15 lacs</td>
<td>2</td>
</tr>
<tr>
<td>Rs. 15 lacs &amp; above</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

Table 10: Respondents Response on Family Income

11. **Reason For Leaving Previous Organization**

Reasons of leaving previous organization are different with different respondents and there are as follows:

- (B) For career growth;
- (C) Better pay package;
- (D) Personal reasons;
(E) Job security;

(F) There skills are not properly utilized;

(G) Some have interest in retail sector.

12. Most Enjoyable Part Of Job

Because of the respondents are front line executive therefore, their most interesting or enjoyable part of job are customer interaction and achieved their sales target.

13. Retention Level

Retention level should be maximized by following:-

(i) Better remuneration

(ii) Proper increments

(iii) Transparent appraisal system

(iv) Better job conditions

(v) Employees counseling

(vi) Social gathering (parties, picnics)

14. Dream Organization

- Almost all the respondents want their dream organization as better pay master, more big company with good profile.
• Few are still want to stay with their present organization in future as they are satisfied with their present organization

• Some respondents want their dream organization as where there skills are properly utilized.

• Some want to change their respective sector with other like automobile and telecom because of their interest.

**CONCLUSIONS**

1. 68% respondents are male and only 32% are female. Now, it clears that in retail sector the male employees are in large extent. Because male employees are mobile, having more responsibility of family as compared to female and very much not satisfied with their job (dissatisfaction) are the most prominent reason for employee turnover which create problem in the execution of retention strategies.

2. 72% respondents are unmarried. As unmarried or single individual are more risk taker, they didn’t compromise with their present conditions, they get attracted to other competitors or other sector job most of the time caused problem in retention.

3. 76% respondents are below the age of 30. This data shows that organized retail organization having a young force which may be the cause of employee turnover in this particular sector. Because they have ample opportunity of better job prospect also create problem in retention.

4. 50% respondents are post graduate. 32% are graduate and only 18% are below graduation.

5. All the respondents are agreed that if they satisfied with organizational policy/organizational climate of their concerned organization than their retention level is at maximum. The study reveals that there is a relationship between organizational policy/climate and retention. As the organizational policy/climate become simple and understandable, co-operative, and trustworthy than retention level become higher.
6. From the study it was clear that retail employees are agreed on the fact that their organized retailers provides better working condition/quality of work life to their employees so, they do not leave the job. And it was also proving by the chi-square test where it clear that there is no relationship between retention and work conditions/quality of work life.

7. Different personal attributes like higher studies, career growth, recognition, family had direct impact on respondent’s current employability. Retail employees who’s facing such personal problem shows decreasing level of retention in comparison to those respondents who had less personal problem.

8. About 56% respondents are involved in enhancing their skills or qualification like they go for higher studies or any other diploma courses for their career advancement which caused employee turnover in retail sector.

9. About 56% respondents rate their present employability as moderate. Its means that employees had a capability of gaining initial employment, maintaining employment, and obtaining new employment if required. So, present employability also creates a problem for retention in organized retail sector.

10. The personal income of 76% employees is between Rs. 1-3 lacs and other 24% employees had between Rs. 3-6 lacs. This data shows that employees having less salary are more prone to switch over on other job easily.

11. Most of the organizations are trying to retain their employees by the various means like practicing social gathering, conducting good appraisal system, provide better remuneration and increments and proper counseling.

**RECOMMENDATION**

1. Compensation constitutes the largest part of the employee retention process. The employees always have high expectations regarding their compensation packages. So an attractive compensation package should plays a critical role in retaining the employees.
2. Growth and development are the integral part of every individual’s career. If an employee can not foresee his path of career development in his current organization, there are chances that he’ll leave the organization as soon as he gets an opportunity.

3. The work profile on which the employee is working should be in sync with his capabilities. The profile should not be too low or too high.

4. Employees’ responsibilities in the organization should help him achieve his personal goals also. Organizations cannot keep aside the individual goals of employees and foster organizations goals. Employees’ priority is to work for them and later on comes the organization. If he’s not satisfied with his growth, he’ll not be able to contribute in organization growth.

5. Employees should be trained and given chance to improve and enhance their skills. These trainings can be given to improve many skills like communications skills, technical skills, in-house processes and procedures improvement related skills and customer satisfaction related skills or special project related skills.

6. Management should try to focus on its employees and support them not only in their difficult times at work but also through the times of personal crisis.

7. Management can support employees by providing them recognition, appreciation, proper counseling and providing emotional support.

8. The feedback from supervisor helps the employee to feel more responsible, confident and empowered. They tend to be honest, and they provide consistent feedback, both positive and negative. They are respectful of others preserving an employee's dignity is important to them and they respect differences and value diversity among their employees.

9. An employee should be recruited if there is a proper place and duties for him to perform. Otherwise he’ll feel useless and will be dissatisfied and it becomes the reason of employee turnover.

10. The reason of employee’s turnover may be personal or professional. These reasons should be understood by the employer and should be taken care of. The organizations are becoming aware of these reasons and adopting many strategies for employee retention.
Managers who retain employees tend to be good listeners who show an interest in what employees are thinking and doing. Certainly, they share many of the characteristics of a good teacher; they are good communicators, and regardless of personality they are caring, fair, and attentive, and stayed focused on company goals.

REFERENCE

- A T Kearney's (2009) 8th Annual Global Retail Development Index (GRDI), New Delhi.
Abstract

The compensation practices, especially of large financial institutions, were one of the important factors which contributed to the recent global financial crisis. Employees were too often rewarded for increasing the short-term profit without adequate recognition of the risks and long-term consequences that their activities posed to the organizations. These perverse incentives amplified the excessive risk taking that severely threatened the global financial system. The compensation issue has, therefore, been at the Centre stage of the regulatory reforms. To address the issues in a coordinated manner across jurisdictions, the Financial Stability Board (FSB) and Basel Committee on Banking Supervision (BCBS) has brought out a set of principles and implementation standards on sound compensation practices which could be reflected in the Guidelines issued by RBI. The principles are intended to regulate incentives towards excessive risk taking that may arise from the structure of compensation schemes, call for effective governance of compensation, alignment of compensation with prudent risk taking, effective supervisory oversight and stakeholder engagement.

In this paper an attempt has been made to explain the Guidelines issued by the Reserve Bank of India on Compensation Management system of Foreign Banks and Private Banks operating in India and the Principles which have formed the basis of these Guidelines. This paper could be considered as vital seed to existing branch of knowledge in Banking Industry and would be useful for Students, Bankers, Strategist, Policy Makers and Researchers.

Keywords: Guidelines of RBI, Compensation management system, Effective Governance, Remuneration Committee Risk Management Committee
In recent time period, we has witnessed that the World Economy is moving through some intricate circumstances as bankruptcy of banking & financial institutions, debt crisis in major economies of the world. The scenario has become very indeterminate leading to recession in major economies US, Europe and Asia. This poses some serious questions about the survival, growth and maintaining the sustainable development. However many International institutions are of the view that Compensation Practices, especially of large financial institutions were one of the important factors which have contributed to the recent global Financial Crisis. It could be inferred that the Short-term profit without adequate recognition of the Vital risks and the Long term embedded consequences are been ignored. The employees were often rewarded for such behaviour which is potentially cribbing Bank to Higher risk side. Compensation to employee has become pivotal stage of the regulatory reforms because of many perverse incentives policies has amplified the excessive Risk taking attitude which has severely threatened the global financial system. In this paper an attempt has been made to review the background and the reasons due to which the RBI has taken such steps.

**Historical Background**

Banking in India originated in the last decades of the 18th century. The first banks were The General Bank of India, which started in 1786, and Bank of Hindustan, which started in 1770; both are now defunct. Later, the Bank of Calcutta, later renamed the Bank of Bengal, was established on 2 June 1806. The Bank of Bengal was one of three Presidency banks, the other two being the Bank of Bombay (incorporated on 15 April 1840) and the Bank of Madras (incorporated on 1 July 1843). All three Presidency banks were incorporated as joint stock companies and were the result of the royal charters, which laid foundation for modern banking in India. In 1921, all presidency banks were amalgamated to form the Imperial Bank of India. Imperial bank carried out limited number of central banking functions prior to establishment of RBI. It engaged in all types of commercial banking business except dealing in foreign exchange. Reserve Bank of India Act was passed in 1934 & Reserve Bank of India (RBI) was constituted as an apex body without major government ownership. Banking Regulations Act was passed in 1949. This regulation brought RBI under government control. Under the act, RBI got wide ranging powers for supervision & control of banks. The Act also vested licensing powers & the authority to conduct inspections in RBI.

In 1955, RBI acquired control of the Imperial Bank of India, which was renamed as State Bank of India. In 1959, SBI took over control of eight private banks floated in the erstwhile princely states, making them as its 100% subsidiaries. It was 1960, when RBI was empowered to force compulsory merger of weak banks with the strong ones. It significantly reduced the total number of banks from 566 in 1951 to 85 in 1969. In July 1969, government nationalised 14 banks having deposits of Rs. 50 crores & above. In 1980, government acquired 6 more banks with deposits of more than Rs.200 crores. Nationalization of banks was to make them play the role of catalytic agents for economic growth. The Narasimha Committee report suggested wide ranging reforms for the banking sector in 1992 to introduce internationally accepted banking practices. The amendment of Banking Regulation Act in 1993 saw the entry of new private sector banks. Banking industry is the back bone for growth of any economy. The journey of Indian Banking Industry has faced many waves of economic crisis. Recently, we have seen the economic crisis of US in 2008-09 and now the European crisis. The general scenario of the world economy is very critical. It is the banking rules and regulation framework of India which has prevented it from the world economic crisis. In order to understand the challenges and
opportunities of Indian Banking Industry, first of all, we need to understand the general scenario and structure of Indian Banking Industry as explained in below sections.

**Structure of Indian Banking Industry**

Banking Industry in India functions under the sunshade of Reserve Bank of India – the regulatory, central bank. Banking Industry mainly consists of:

- Commercial Banks (Scheduled and Non – Scheduled under Reserve Bank of India Act 1934)
- Co-operative Banks (Scheduled and Non – Scheduled under Reserve Bank of India Act 1934)

The commercial banking structure in India consists of: Scheduled Commercial Banks Unscheduled Bank. Scheduled commercial Banks constitute those banks which have been included in the Second Schedule of Reserve Bank of India (RBI) Act, 1934. RBI in turn includes only those banks in this schedule which satisfy the criteria laid down vide section 42 (60) of the Act.
Cause and Background for the Issuance of Guidelines by Reserve Bank of India on Compensation Management system 2012

It is practically and fundamentally impossible for any nation to exclude itself from world economy. Therefore, for sustainable development, one has to adopt integration process in the form of liberalization and globalization as India spread the red carpet for foreign firms in 1991. The impact of globalization becomes challenges for the domestic enterprises as they are bound to compete with global players. If we look at the Indian Banking Industry, then we find that there are 35 foreign banks operating in India, which becomes a major challenge for Nationalized and private sector banks. These foreign banks are large in size, technically advanced and having presence in global market, which gives more and better options and services to Indian traders.

Reserve Bank of India Act 1934 and the Banking Regulation Act 1949 shoulders immense responsibility and power with RBI. The above chart indicates the domain of the RBI power and Control in Indian Banking Sector. Indian Banking sector is considered a Backbone of Indian economy. In Indian Banking sector, the Public sector Banks, Private Banks, Foreign Banks and Co-operative Banks.

The critical analysis of Guideline issued by RBI dated 13 January 2012 enlighten us the intention inferring the measures for regulating the compensation packages for Private and Foreign Banks needs to be amended. There are many economic reasons which are plinth for the Global Financial Crises of 2008. One of the most vital reasons claimed Internationally is the Compensation Management system in association with the Risk management of the Banking Industry.

It could be inferred that the Employee of large Financial Institution were too often rewarded for enhancing the short-term profit without sufficient anticipation of the risks and the long term incidental consequences upon the organization. These pertinacious incentives amplified the excessive risk taking feature that has rigorously threatened the global financial system. The compensation issue has, therefore, been at the Centre stage of the regulatory reforms. Also it has been observed that there is vast difference between the compensation pay Packages among the Public Sector Banks, Private Banks and Foreign Banks operating in India. Few reports published during Dec 2011 and Jan 2012 have conveyed that the compensation packages of employees especially the higher officials of leading private Banks in India is around 10 to 15 times higher than that of Public Sector Banks.

Recommendation of Financial Stability Board and Basel Committee and RBI measures

The Financial Stability Board emerged from the Financial Stability Forum (FSF), a group of finance ministries, central bankers, and international financial bodies. The FSF was founded in 1999 to promote international financial stability, after discussions among Finance Ministers and Central Bank Governors of the G7 countries, and a study which they commissioned. The FSF facilitated discussion and co-operation on supervision and surveillance of financial institutions, transactions and events. FSF was managed by a small secretariat housed at the Bank for International Settlements in Basel, Switzerland.
The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. It was established after the 2009 G-20 London summit in April 2009 as a successor to the Financial Stability Forum. The Board includes all G-20 major economies, FSF members, and the European Commission. It is based in Basel, Switzerland.

The following countries and organizations are listed as members of the Financial Stability Board (FSB): 2012

Argentina
Australia
Brazil
Canada
China
France
Germany
Hong Kong
India
Indonesia
Italy
Japan
Mexico
The Netherlands
Russia
Saudi Arabia
Singapore
South Africa
South Korea
Spain
Switzerland
Turkey
United Kingdom
UnitedStates
Organizations

- Bank for International Settlements
- European Central Bank
- European Commission
- International Monetary Fund
- Organisation for Economic Co-operation and Development
- The World Bank

To address the issues in a coordinated manner across jurisdictions, the Financial Stability Board (FSB) has brought out a set of principles and implementation standards on sound compensation practices in April and September 2009, respectively.

The principles are intended to reduce incentives towards excessive risk taking that may arise from the structure of compensation schemes. The principles call for effective governance of compensation, alignment of compensation with prudent risk taking, effective supervisory oversight and stakeholder engagement. The principles have been endorsed by the G-20 countries and the Basel Committee on Banking Supervision (BCBS) and are under implementation across jurisdictions. In this background, an announcement was made in the Second Quarter Review of Monetary Policy 2009-10 that in line with the steps taken by the global community, Reserve Bank to issue guidelines to Private Sector Banks and Foreign Banks on sound compensation policy. Accordingly, draft guidelines on compensation of whole time directors /Chief Executive Officers/other Risk takers and Control function staff were framed and placed on the Reserve Bank’s website in July 2010 for public comments. A large number of comments/ suggestions were received on the draft guidelines and it was proposed in the Second Quarter Review of Monetary Policy for 2010-11 to issue final guidelines by end-December 2010.

Meanwhile, in October 2010, the Basel Committee on Banking Supervision (BCBS) brought out a consultative paper titled “Range of Methodologies for Risk and Performance Alignment of Remuneration”, for public comments.

Therefore, the implementation of the Reserve Bank’s guidelines on compensation policy was deferred till 2012-13 and banks were advised through a press release on February 23, 2011 to refer to the BCBS consultative paper and begin preparatory work.

However in January 2010, the Basel Committee on Banking Supervision (BCBS) published “Compensation Principles and Standards Assessment Methodology” (referred as the “Guidance”), In May 2011, the Basel Committee on Banking Supervision (BCBS) brought out and circulated the a consultative paper to all the Central Banks of member states which is titled “Range of Methodologies for Risk and Performance Alignment of Remuneration” and in July 2011 the BCBS in consultation with the FSB has also published “Pillar 3 disclosure requirements for remuneration”.

The Basel Committee on Banking Supervision (BCBS) has since published in May 2011 the final report on “Range of Methodologies for Risk and Performance Alignment of Remuneration”. The main objectives of the report are to present certain remuneration
practices and methodologies that support sound incentives and also the elements influencing
the effectiveness of risk alignment that should be considered by banks when developing their
methodologies and by supervisors, when reviewing and assessing banks’ practices. Thus after
consideration of the above consultative Paper, Reserve Bank of India finalized the
compensation guidelines for implementation by private sector and foreign banks from the
financial year 2012-13 and were published on 13 January 2012. These guidelines shall
supersede the Reserve Bank’s extant guidelines relating to compensation.

As hitherto, private sector and foreign banks operating in India would be required to obtain
regulatory approval for grant of remuneration to WTDs/CEOs in terms of Section 35B of the
Banking Regulation Act, 1949 (B.R. Act, 1949). The approval process will involve, inter alia,
an assessment whether the compensation policies and practices are in accordance with the
FSB Principles.

Critical Analysis on the Guidelines of RBI and its Explanation

The Guidelines of RBI are titled under four main title parts and Two Appendix which are
explained as below.

B. Compensation guidelines to Private Sector Banks.
C. Compensation Guidelines to Foreign Banks.
D. Regulatory and Supervisory Approval / Oversight


The Principles for Sound Compensation Practices issued by the FSB in April 2009 aim to
ensure effective governance of compensation, alignment of compensation with prudent risk
taking and effective supervisory oversight and stakeholder engagement in compensation. The
Principles in brief are as under:

(i) Effective governance of compensation

• The firm’s board of directors must actively oversee the compensation system’s design
and operation.
• The firm’s board of directors must monitor and review the compensation system to
ensure the system operates as intended.
• Staff engaged in financial and risk control must be independent, have appropriate
authority, and be compensated in a manner that is independent of the business areas they
oversee and commensurate with their key role in the firm.

(ii) Effective alignment of compensation with prudent risk taking

• Compensation must be adjusted for all types of risk.
• Compensation outcomes must be symmetric with risk outcomes.
• Compensation payout schedules must be sensitive to the time horizon of risks.
• The mix of cash, equity and other forms of compensation must be consistent with risk
alignment.

(iii) Effective supervisory oversight and engagement by stakeholders
Supervisory review of compensation practices must be rigorous and sustained, and deficiencies must be addressed promptly with supervisory action.

Firms must disclose clear, comprehensive and timely information about their compensation practices to facilitate constructive engagement by all stakeholders.

Implementation Standards issued by the FSB in September 2009 focus on areas in which especially required rapid progress. They do not fully cover all aspects of the FSB Principles but prioritise areas that should be addressed by firms and supervisors to achieve effective global implementation of the Principles.

The guidelines delineated below are based on the above mentioned Principles and Implementation Standards of the FSB, as well as current statutory and regulatory framework in India. Banks are required to take steps immediately to implement the guidelines by putting in place necessary policy/infrastructure.

**B. Compensation guidelines to Private Sector Banks.**

1. **Effective governance of compensation**

1.1 Guideline 1: Compensation Policy

Banks should formulate and adopt a comprehensive compensation policy covering all their employees and conduct annual review thereof. The policy should cover all aspects of the compensation structure such as fixed pay, perquisites, bonus, guaranteed pay, severance package, stock, pension plan, gratuity, etc., taking into account these guidelines. The process of framing/reviewing the policy should be completed by March 2012 for implementation from the financial year 2012-13.

1.2 Guideline 2: Board and Remuneration Committee (RC)

The Board of directors of banks should constitute a Remuneration Committee (RC) of the Board to oversee the framing, review and implementation of compensation policy of the bank on behalf of the board. The RC should have a minimum of three members and should include at least one member from Risk Management Committee of the Board. The majority of members of the RC should be independent non-executive directors. The RC should work in close coordination with Risk Management Committee of the bank, in order to achieve effective alignment between remuneration and risks. The RC should also ensure that the cost/income ratio of the bank supports the remuneration package consistent with maintenance of sound capital adequacy ratio.

2. **Effective alignment of compensation with prudent risk taking**

2.1 Guideline 3: For Whole Time Directors / Chief Executive Officers

Banks should ensure that for the WTDs / CEOs:

(a) Compensation is adjusted for all types of risk,
(b) Compensation outcomes are symmetric with risk outcomes, and
(c) Compensation payouts are sensitive to the time horizon of the risk.
(d) The mix of cash, equity and other forms of compensation must be consistent with risk alignment.

A wide variety of measures of credit, market and liquidity risks may be used by banks in implementation of risk adjustment. The risk adjustment methods should preferably have both quantitative and judgmental elements.

2.1.1 Fixed pay

Banks are required to ensure that the fixed portion of compensation is reasonable, taking into account all relevant factors including the industry practice.

2.1.2 Variable pay composition and deferral

While designing the compensation arrangements it should be ensured that there is a proper balance between fixed pay and variable pay. However, variable pay should not exceed 70% of the fixed pay in a year. Within this ceiling, at higher levels of responsibility the proportion of variable pay should be higher. The variable pay could be in cash, or stock linked instruments or mix of both. The Employees Stock Option Plan (ESOP) prevalent in India may be excluded from the components of variable pay. The deterioration in the financial performance of the bank should generally lead to a contraction in the total amount of variable remuneration paid.

Where the variable pay constitutes a substantial portion of the fixed pay, say 50% or more, an appropriate portion of the variable pay, say 40% to 60% must be deferred for over a period. The bank may define what is ‘substantial’ in its compensation policy. There should be proper balance between the cash and stock / share components (other than ESOP) in the variable pay in case the variable compensation contains stock or share linked instruments (other than ESOP).

Employees Stock Option Plan (ESOP) is kept outside the computation of the total compensation of an employee for the purpose of this guideline, but since it is used as a compensation as well as retention tool by banks, the extent of ESOP should be reasonable. However, norms for grant of ESOP should be framed by banks in conformity with relevant statutory provisions and SEBI guidelines, and should form part of the bank’s compensation policy. The details of ESOP granted should also be disclosed in terms of the disclosure requirements stipulated in this guideline.

2.1.3 Variable pay –timing

In case of deferral arrangements of variable pay, the deferral period should not be less than three years. Compensation payable under deferral arrangements should vest no faster than on a pro rata basis.

2.1.4 Malus / Clawback
In the event of negative contributions of the bank and/or the relevant line of business in any year, the deferred compensation should be subjected to malus/clawback arrangements. A malus arrangement permits the bank to prevent vesting of all or part of the amount of a deferred remuneration. Malus arrangement does not reverse vesting after it has already occurred.

A Clawback, on the other hand, is a contractual agreement between the employee and the bank in which the employee agrees to return previously paid or vested remuneration to the bank under certain circumstances. Banks may put in place appropriate modalities to incorporate malus / clawback mechanism in respect of variable pay, taking into account relevant statutory and regulatory stipulations as applicable.

2.1.5 Guaranteed bonus

Guaranteed bonuses are not consistent with sound risk management or the pay-for performance principles and should not be part of compensation plan. Therefore, joining / sign on bonus should only occur in the context of hiring new staff and be limited to first year. However, guaranteed bonus should be in the form of ESOPs only since payments in cash upfront would create perverse incentives. Further, banks should not grant severance pay other than accrued benefits (gratuity, pension, etc.) except in cases where it is mandatory by any statute.

2.1.6 Hedging

Banks should not provide any facility or funds or permit employees to insure or hedge their compensation structure to offset the risk alignment effects embedded in their compensation arrangement. To enforce the same, banks should establish appropriate compliance arrangements.

2.2 Guideline 4: For risk control and compliance staff

2.2.1 Members of staff engaged in financial and risk control should be compensated in a manner that is independent of the business areas they oversee and commensurate with their key role in the bank. Effective independence and appropriate authority of such staff are necessary to preserve the integrity of financial and risk management’s influence on incentive compensation. Back office and risk control employees play a key role in ensuring the integrity of risk measures. If their own compensation is importantly affected by short-term measures, their independence will be compromised. If their compensation is too low, the quality of such employees may be insufficient to their tasks and their authority may be undermined. The mix of fixed and variable compensation for control function personnel should be weighted in favour of fixed compensation.

2.2.2 Subject to the above, in devising compensation structure, banks may adopt principles similar to principles enunciated for WTD/CEO, as appropriate.

2.3 Guidelines 5: For other categories of staff
For the other categories of staff, banks may devise appropriate compensation structure. However, in doing so, banks may adopt principles similar to the principles enunciated for WTD/CEO as appropriate.

2.4 Banks are advised to refer to the BCBS report entitled Range of Methodologies for Risk and Performance Alignment of Remuneration published in May 2011 for guidance. A gist of the methodologies is furnished at the Appendix 1. The report is primarily of a technical nature and is not intended to be prescriptive. It intends to enhance the banks’ and supervisors’ understanding of risk-adjusted remuneration. This report, by providing some clarification on design of risk-adjusted remuneration schemes, could support and facilitate the greater adoption of sound practices in the banking sector.

3. Disclosure and engagement by stakeholders

3.1 Guideline 6: Disclosure

Banks are required to make disclosure on remuneration on an annual basis at the minimum, in their Annual Financial Statements.

3.2 To improve clarity on disclosure, banks may make the disclosures in table or chart format and make disclosures for previous as well as the current reporting year (previous year’s disclosure need not be made when the disclosures are made for the first time). The key disclosures required to be made by banks have been given in the Appendix 2 to the guidelines.

C. Compensation Guidelines to Foreign Banks

1. At present, foreign banks are operating in India through branch mode of presence. The compensation policy of these banks is governed by their respective Head Office policies. In the light of the initiative taken by the FSB, G-20 and the BCBS endorsement of the FSB principles, it is expected that Head Offices of most of these banks would align their compensation policies in line with the FSB principles. Foreign Banks operating in India will, therefore, be required to submit a declaration to Reserve Bank annually from their Head Offices to the effect that their compensation structure in India, including that of CEO’s, is in conformity with the FSB principles and standards. RBI would take this into account while according approval of CEOs’ compensation.

2. The compensation proposals for CEOs and other staff of foreign banks operating in India which have not adopted the FSB principles in their home country are required to implement the compensation guidelines as prescribed for private sector banks in India, to the extent applicable to them.

D. Regulatory and Supervisory Approval / Oversight

1. Banks may be aware, that in terms of the Section 10(1)(b)(iii) of the Banking Regulation Act, 1949 (B.R. Act, 1949), no banking company shall employ or continue the employment of any person whose remuneration is, in the opinion of the Reserve Bank, excessive.
2. As hitherto, private sector and foreign banks operating in India would be required to obtain regulatory approval for grant of remuneration to WTDs/ CEOs in terms of Section 35B of the B.R. Act, 1949. The approval process will involve an assessment whether the compensation policies and practices are in accordance with the FSB Principles, including inter alia, whether there is appropriate balance between fixed and variable pay, whether adequate deferrals are built in the variable component and whether cost/ income ratio supports the remuneration package consistent with maintenance of sound capital adequacy ratio.

3. Banks’ compensation policies would be subject to supervisory oversight including review under the Supervisory Review and Evaluation Process (SREP) under Pillar 2 of Basel II framework. Deficiencies would have the effect of increasing the risk profile of banks with attendant consequences including a requirement of additional capital if the deficiencies are very significant.

Appendix 1:
Methodologies for risk and performance alignment of remuneration

The Basel Committee on Banking Supervision (BCBS) in consultation with the FSB has published a report in May 2011 entitled Range of Methodologies for Risk and Performance Alignment of Remuneration. The main objectives of the report are to present (i) some remuneration practices and methodologies that support sound incentives and (ii) the challenges or elements influencing the effectiveness of risk alignment that should be considered by banks when developing their methodologies and by supervisors, when reviewing and assessing banks’ practices.

Some of the key stipulations of the report are as under:

• In order for incentive-based remuneration to work, the variable part of remuneration should be truly and effectively variable and can even be reduced to zero in line with the symmetry principle defined by the FSB. A key element that supervisors expect is the ability for banks to demonstrate that the methodologies they developed to adjust variable remuneration to risk and performance are appropriate to their specific circumstances.

• The methodologies for adjusting remuneration to risk and performance should also be consistent with the general risk management and corporate governance framework.

• Performance measures and their relation to remuneration packages should be clearly defined at the beginning of the performance measurement period to ensure that the employees perceive the incentives mechanism. The usual annual determination of bonuses should be based on rules, processes and objectives known in advance, recognizing that some discretion will always be needed.

• Banks should use a combination of financial and non-financial measures to assess employee performance and adapt the measurement to each employee’s specific situation. Qualitative factors (like knowledge, skills or abilities), might play an important role when it comes to judging and rewarding some activities- particularly when these serve to reinforce the bank’s risk management goals.
• The nature and extent to which risk adjustments are needed depends first on the extent to which performance measures capture risks, but in all cases, some form of risk adjustment is needed as remuneration is often awarded before the final outcome of an activity is known. Risks taken need to be estimated (ex ante), risk outcomes observed (ex post) and both ex ante estimates and ex post outcomes should affect payoffs.

• Risk adjustments need to take into account the nature of the risks involved and the time horizons over which they could emerge. The impact of remuneration adjustments should be linked to actions taken by employees and/or business units, and their impact on the level of risk taken on by the bank.

• The nature of the award process, which links the variable remuneration of each individual employee with bonus pools and the total amount of variable remuneration at a bank’s level, is also an area that should be carefully considered by banks and supervisors, as it directly influences how and when performance and risk adjustment are or can be used.

Appendix 2.

The below appendix published by RBI In Its Guidelines is based upon the recommendation set forth by the Basel Committee in their Publication dated July 2011 titled as “Pillar 3 Discloser requirement for remuneration” Below are complete details of the appendix.

**Disclosure Requirements for Remuneration**

<table>
<thead>
<tr>
<th>Remuneration</th>
<th>Qualitative disclosures</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Information relating to the composition and mandate of the Remuneration Committee.</td>
</tr>
<tr>
<td>(b)</td>
<td>Information relating to the design and structure of remuneration processes and the key features and objectives of remuneration policy.</td>
</tr>
<tr>
<td>(c)</td>
<td>Description of the ways in which current and future risks are taken into account in the remuneration processes. It should include the nature and type of the key measures used to take account of these risks.</td>
</tr>
<tr>
<td>(d)</td>
<td>Description of the ways in which the bank seeks to link performance during a performance measurement period with levels of remuneration.</td>
</tr>
<tr>
<td>(e)</td>
<td>A discussion of the bank’s policy on deferral and vesting of variable remuneration and a discussion of the bank’s policy and criteria for adjusting deferred</td>
</tr>
</tbody>
</table>
remuneration before vesting and after vesting.

(f) \(\text{Description of the different forms of variable remuneration (i.e. cash, shares, ESOPs and other forms) that the bank utilizes and the rationale for using these different forms.}\)

### Quantitative disclosures
(The quantitative disclosures should only cover Whole Time Directors / Chief Executive Officer/ Other Risk Takers)

| (g) | Number of meetings held by the Remuneration Committee during the financial year and remuneration paid to its members. |
| (h) | • Number and total amount of sign-on awards made during the financial year.  
• Details of guaranteed bonus, if any, paid as joining / sign on bonus.  
• Details of severance pay, in addition to accrued benefits, if any. |
| (i) | • Total amount of outstanding deferred remuneration, split into cash, shares and share-linked instruments and other forms.  
• Total amount of deferred remuneration paid out in the financial year. |
| (j) | • Breakdown of amount of remuneration awards for the financial year to show fixed and variable, deferred and non-deferred. |
| (k) | • Total amount of outstanding deferred remuneration and retained remuneration exposed to ex post explicit and / or implicit adjustments.  
• Total amount of reductions during the financial year due to ex- post explicit adjustments.  
• Total amount of reductions during the financial year due to ex- post implicit adjustments. |

### The Explanation of Principles laid down by the Basel Committee on Compensation which are the Plinth of RBI GUIDELINES 2012

The Guidelines issued by the RBI have firm intention of regularization in Banking practices and safe guard socio-economic aspects of India, however let us now discuss the vital
principles laid down by the Basel Committee which have form the basis of the Guidelines of RBI 2012.


The Guidance forms the basis of the Consultative paper published in May 2011 by BASEL committee and the Consultative Paper forms the plinth of RBI Guidelines. The Guidance is designed to assist national financial supervisory agencies including Central Banks in assessing a bank’s compensation practices. The Basel Committee said that the Guidance “will contribute to ongoing implementation of” nine “Principles for Sound Compensation Practices” (the “Principles”) adopted by the Financial Stability Board (the predecessor of the Financial Statutory Forum (the “FSF”) that the Basel Committee believes are appropriate standards to use in implementing banks’ compensation practices.

The Basel Committee on Banking Supervision (BCBS) is a committee of banking supervisory authorities that was established by the central bank governors of the Group of Ten countries in 1974. It provides a forum for regular cooperation on banking supervisory matters. Its objective is to enhance understanding of key supervisory issues and improve the quality of banking supervision worldwide. The Chairman of the Committee in year 2012 is Stefan Ingves, Governor of the central bank of Sweden (Sveriges Riksbank). The Committee’s Secretariat is located at the Bank for International Settlements (BIS) in Basel, Switzerland. However, the BIS and the Basel Committee remain two distinct entities. The Basel committee along with its sister organizations, the International Organization of Securities Commissions and International Association of Insurance Supervisors together make up the Joint Forum of international financial regulators. In 2012 Oct, Central Banks from 27 Countries were members on Basel Committee. Countries are represented by their central bank and also by the authority with formal responsibility for the prudential supervision of banking business where this is not the Central Bank.

The Committee also frames guidelines and standards in different areas - some of the better known among them are the international standards on capital adequacy, the Core Principles for Effective Banking Supervision and the Concordat on cross-border banking supervision. The Guidance covers all nine Principles, which are organized into three sections and address: (1) governance of compensation; (2) alignment of compensation with prudent risk taking; and (3) supervisory oversight of compensation practices and engagement by stakeholders. The Principles were proposed by the FSF as standards to reduce individuals’ incentives to take excessive risks present in banks’ compensation arrangements.

The Guidance recognizes that the Principles are designed to be internationally agreed upon objectives and high level principles with only a few specific benchmarks. The Basel Committee also acknowledges that the translation of the Principles and Guidance into national (rather than international) rules is key and that “in many countries, domestic rules represent the key reference point for supervisors, both in practice and in a legal sense.” In
addition, the Basel Committee stated that the Guidance is targeted at “significant financial institutions, particularly large, systemically important firms.”

The assessment methodology provided in the Guidance has two major parts. The first part provides examples of criteria that could be used to assess whether a bank’s compensation practices achieve the objectives of the applicable Principle. The second component – a supervisory review section – provides a toolkit that the Basel Committee said should be adapted to existing supervisory approaches and to the bank being examined. The Basel Committee further stated that the Guidance is “designed to help support a level playing field.”

The nine Principles are set forth below and certain aspects of the related Guidance proposed by the Basel Committee are discussed following each set of Principles:

I. Principles concerning effective governance of compensation

PRINCIPLE 1: The firm’s board of directors must actively oversee the compensation system’s design and operation. The compensation system should not be primarily controlled by the chief executive officer and management team. Relevant board members and employees must have independence and expertise in risk management and compensation.

PRINCIPLE 2: The firm’s board of directors must monitor and review the compensation system to ensure the system operates as intended. The compensation system should include controls. The practical operation of the system should be regularly reviewed for compliance with design policies and procedures. Compensation outcomes, risk measurements, and risk outcomes should be regularly reviewed for consistency with intentions.

PRINCIPLE 3: Staff engaged in financial and risk control must be independent, have appropriate authority, and be compensated in a manner that is independent of the business areas they oversee and commensurate with their key role in the firm. Effective independence and appropriate authority of such staff are necessary to preserve the integrity of financial and risk management’s influence on incentive compensation.

Principles 1, 2 and 3 focus on governance of compensation practices and the effectiveness of an independent financial and risk control function. The Guidance discusses the need for a compensation committee of the Board of Directors that exercises competent and independent judgment on compensation policies and practices, that works closely with a bank’s risk management committee and/or risk management function and that ensures that compensation arrangements do not provide incentives for excessive risk taking. Among suggestions made are that personnel involved in controlling compensation risk management be themselves compensated at a level “sufficient to allow them to carry out their function effectively” and that the Board and/or the compensation committee be actively involved in performance reviews of these individuals.

II. Principles concerning alignment of compensation with prudent risk taking

PRINCIPLE 4: Compensation must be adjusted for all types of risk. Two employees who generate the same short-run profit but take different amounts of risk on behalf of their firm should not be treated the same by the compensation system. In general, both quantitative measures and human judgment should play a role in determining risk adjustments. Risk
adjustments should account for all types of risk, including difficult-to-measure risks such as liquidity risk, reputation risk and cost of capital.

**PRINCIPLE 5:** Compensation outcomes must be symmetric with risk outcomes. Compensation systems should link the size of the bonus pool to the overall performance of the firm. Employees’ incentive payments should be linked to the contribution of the individual and business to such performance. Bonuses should diminish or disappear in the event of poor firm, divisional or business unit performance.

**PRINCIPLE 6:** Compensation payout schedules must be sensitive to the time horizon of risks. Profits and losses of different activities of a financial firm are realized over different periods of time. Variable compensation payments should be deferred accordingly. Payments should not be finalized over short periods where risks are realized over long periods. Management should question payouts for income that cannot be realized or whose likelihood of realization remains uncertain at the time of payout.

**PRINCIPLE 7:** The mix of cash, equity and other forms of compensation must be consistent with risk alignment. The mix will vary depending on the employee’s position and role. The firm should be able to explain the rationale for its mix.

Principles 4 through 7 focus on compensation practices that reduce employees’ incentives to take excessive risk. The Guidance suggests that in determining a business unit’s variable compensation pool, the amount should be adjusted for all types of risk and notes specifically as elements to be considered: (a) the cost and quantity of capital required to support the risk of the business; (b) the liquidity risk assumed in the conduct of the business; and (c) consistency with the timing and likelihood of potential future revenues incorporated into current earnings. The Guidance provides that compensation payments should be deferred to permit clawback in the event of realization of risks during the deferral period. The Guidance suggests that firms have measures or strategies to treat “difficult-to-measure” risks, such as reputational risk, in their compensation practices. The Guidance further states that a low level of profits or losses at the firm-wide level should reduce or eliminate bonus pool payments and variable compensation to senior executives. Furthermore, the Basel Committee says that firms should have in place procedures or guidelines that explain the rationale for the percentage of cash, equity and other forms of compensation granted to an individual.

**III. Principles concerning supervisory oversight and engagement by stakeholders**

**PRINCIPLE 8:** Supervisory review of compensation practices must be rigorous and sustained, and deficiencies must be addressed promptly with supervisory action. Supervisors should include compensation practices in their risk assessment of firms, and firms should work constructively with supervisors to ensure their practices conform with the Principles. Regulations and supervisory practices will naturally differ across jurisdictions and potentially among authorities within a country. Nevertheless, all supervisors should strive for effective review and intervention. National authorities, working through the FSF, will ensure even application across domestic financial institutions and jurisdictions.
PRINCIPLE 9: Firms must disclose clear, comprehensive and timely information about their compensation practices to facilitate constructive engagement by all stakeholders. Stakeholders need to be able to evaluate the quality of support for the firm’s strategy and risk posture. Appropriate disclosure related to risk management and other control systems will enable a firm’s counterparties to make informed decisions about their business relations with the firm. Supervisors should have access to all information they need to evaluate the conformance of practice to the Principles.

In July 2011 the Basel Committee on Banking Supervision (BCBS) in consultation with the FSB has also published “Pillar 3 disclosure requirements for remuneration”. These principles were considered by RBI while framing the Guidelines of 2012. As per these principles, Banks are requested to disclose qualitative and quantitative information about their remuneration practices and policies covering the following areas:

The Governance/Committee Structures

- The Design/Operation of remuneration structure, frequency of review
- the Independence of remuneration for risk/compliance staff
- The Risk adjustment methodologies
- The Link between remuneration and performance.
- The Long-term performance measures (deferral, malus, clawback)
- The Types of remuneration (cash/equity, fixed/variable)

Conclusion

Principles stated by Basel Committee on Banking and Supervision (BCBS) in consultative Papers address supervisory review of compensation practices and transparency of disclosure of compensation practices in Banking Sector. The Guidance paper urges that national supervisors (Central Banks of member State) to limit variable compensation as a percentage of total net revenue when it is inconsistent with the maintenance of sound capital levels. In addition, the Guidance paper provides that national supervisors including Central Banks of Various States should coordinate their efforts so that compensation standards are implemented consistently across their respective jurisdictions. Furthermore, the vital Guidelines of Reserve Bank of India 2012 suggests that disclosure of compensation practices should also include criteria used for performance measurement and risk adjustment, the linkage between pay and performance, deferral policy and vesting criteria, and the parameters used for allocating cash versus other forms of compensation. The Principles of the Basel Committee’s Guidance which represent an international attempt to articulate best practices for compensation practices at banks various levels are meticulously reflected in RBI Guidelines 2012. These Guidelines were circulated to all the Private Banks and Foreign Banks operating in India. The intensions of RBI through these guidelines are to put a regulatory method to avoid the downfall of Banks operating in India. These Guidelines of RBI are drafted considering the socio-economic aspects of Banks operating in India. The Compensation aspect is vital in nature and these Guidelines of RBI are the initials attempts to regularize them and cover the Risk part. Earlier in Banking practices in India reveals that the Compensation management and risk management were two separate aspects, But these guidelines enlighten us that there is thin line of difference between these two aspect and they have vital incidental impact on each other. These guidelines specifically describes that
Compensation practices are one of important factors which contributes for the global crisis, as the Employees of Banks were too often rewarded for increasing the short-term profit without adequate recognition of the risks and long-term consequences that their activities posed to the organizations. The imperative directions for constitution of Bank’s own Remuneration Committee /Board and Risk Management Committee are elite and substantive steps take up by RBI considering the virtue of Indian Banking sector. The tenacious incentives amplified the excessive risk taking attitude that severely threatened the financial system in India. In the developing country like India, the decline or even a threat of decline of any Private or Foreign Bank shall have an enormous impact on the socio-economic growth. Developed nations have overcome such decline, but RBI is completely aware that our country’s economic system would take extensive and expensive efforts to overcome such crisis. Hence these guidelines acts as pivotal measure for the regularization and the structuring of the compensation policies of Private and Foreign Banks which shall act as boon for Indian Banking sector as well as safe-guard the socio-economic development.

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Combining Software to Decrease Help Desk Handle Times

Lewis (Will) Horton

Abstract

This paper will discuss the two main benefits of combining the necessary support software required for a helpdesk role at an internet service provider. The two main benefits are reduction of time a helpdesk agent spends on the phone with a customer and increased customer satisfaction. The data used in this paper will look at previous and current handle times of the helpdesk agent, as well as, customer satisfaction ratings before and after their supporting software was combined. The data will show that by combining the necessary software used by the helpdesk agent will result in a more efficient helpdesk and a higher level of customer satisfaction.

Key words: Help desk, decreasing, software

Introduction

In today’s fast paced world, as more and more people are getting connected, the Internet continues to grow at a swift pace. As an Internet service provider this creates a variety of mixed responses. On one hand this means more customers, which in turn, creates more money. On the other hand, it also opens up the door of additional competition. For an ISP to stay competitive, in today’s market, it is important that it run as lean as possible; thus boosting profits. By increasing the profit share there is more revenue to increase their network size and speed, as well as, introducing new products, into the market to increase their overall customer base.

In order to support this new customer base, as well as help the IT call center reach their service level agreements, it is imperative that the helpdesk agents are highly efficient on the phone to assist the customer with their needs. A service level agreement is an agreement that states what the helpdesk will do to support the customer. Many times, in a service level agreement, the amount of customers helped is a key metric. In order to meet this key metric, the main focus of the IT helpdesk agent is their handle time; the amount of time the agent spends on the phone with a customer. This is (usually) shown as an average handle time for the agent for the fiscal month.

One key component, for a company to help its agents lower their handle times, is to make the software easy to use and easy to access. This paper will illustrate through combining the software needed, on a day to day basis by an internet service provider helpdesk agent, it will give the agent a better opportunity to decrease their handle times. Overall, by decreasing handle times, the agents overall productivity increases as well and assists the call center as a whole reach its service levels.
Methodology

There are many papers written about creating a more efficient call center; such as Muwafaq M. F, Al-Kubaisi: “Features of Modern IT Help Desk in Arabic Organizations Qatar Case. It is in this paper that he explains the major shift in IT help desk and the way they are managed. Gunnar Ingi Omarsson also wrote a paper on this subject titled: “Knowledge Management in an IT-Help Desk Environment.” It is in this paper that Gunnar explains that knowledge management is the key to a more functional and efficient IT help desk department.

The data used in this paper will include information from a two year period of an internet service provider. Over the course of these two years, the data will show the average handle times and customer feedback for each helpdesk agent. Along with this information, this paper will show the times in which the software, that the helpdesk agents used, was combined. A valuable aspect in this is that not all the software was combined at one time. This facet will allow the paper to demonstrate improvements in handle time over time.

Software

Within the internet service provider, there are three main pieces of software that were combined to form the software that is now used by these call centers. Each of the pieces of software carries out multiple tasks. Below is a breakdown of each specific task.

The first piece of software handles a large section of the day to day routines taken on by the tier 3 call center. This software handles billing and service codes, equipment maintenance and trouble call schedules. The billing and service codes dictate which services and costs are associated with the services of each customer. In many situations these codes either need to be corrected, due to someone putting incorrect codes on the account or through someone putting the codes on the wrong piece of equipment on the account.

Along with billing and service codes this same piece of software also maintains the equipment used by the account holder. This system manages this equipment, as well as keeping a record of all equipment stored by the internet service provider (warehouse). This software allows agents to remove or replace equipment when necessary to help customers with issues that may arise with their service.

Finally, this software allows the agent to schedule a service call for the customer, when an issue cannot be resolved over the phone, so a technician may go to their location to fix the problem. These schedules are set with blocks of time known as “points.” When an agent selects a specific time frame, both the points and the time frame are removed, from the scheduling software, so no one else can place another trouble call within the same time frame. This not only helps keeps confusion to a minimum, but it also keeps the technicians from being double booked.

The second piece of software, which has several functions, is the network management software. With this piece of software, an agent can take a snapshot of a single device, check router and switches health and network utilization. When a tier 3 agent receives a trouble call, usually it is about a single device. By taking a snapshot of a single device, this software will show the following: IP address assigned to the device, bin file (which dictates the services that specific device will have), signal levels of the connection to the device and many other features of the
equipment, such as router temperature and network over-utilization. These are just some of the reasons that make this piece of software such a critical tool in the agents troubleshooting arsenal.

The third and final piece of software is the escalation software. This is the software, used by the tier 3 agent, to escalate an issue that needs to be addressed by another department. This software not only allows the agent to define the issue(s) and give examples, it also assigns a ticket to the appropriate department. The software itself can manage incidents and allow for analysis of data after issues are resolved (Postmortems). This software is also critical in helping to identify major issues within the network such as outages and device failures.

Aspects of each of these pieces of software were combined, into a middleware application which allowed easier access and quicker response times to the customer’s issues. This middleware was designed solely for this purpose; by taking aspects of the billing system, it allowed a tier 3 agent to access a customer’s account from their phone number, similar to the original billing system software. However, unlike the original software, the middleware combined the essentials of the majority of an original billing system on to one screen instead of accessing multiple screens to retrieve the same data; thereby shortening time on the phone with the customer.

Combining the essentials of the billing system was not the only goal of the middleware. It too allowed a tier 3 agent to view basic aspects of the customer’s equipment to get an immediate verification of the status of a particular device. For example, once a tier 3 agent accessed the account and verified the customer, using the combined billing system access of the middleware, the agent could then go into the equipment screen and verify if the customer’s equipment was on or offline; thus resolving the customer’s problem in a more efficient manner. If the customer’s equipment was offline then the tier 3 agents could immediately schedule a trouble call to have a technician go to the customer site; to either replace the non-functioning device or check to see if there was a physical network problem in the area.

If the equipment was offline the agent could access another screen within the middleware to schedule the trouble call to the customer’s site. This again saves time by allowing the tier 3 agents to only access different screens within the same application instead of accessing multiple applications while dealing with a single customer. These three essential applications now combined under one middleware application have shown reduced handle times in the tier 3 agents since its introduction. But, these were not the only applications combined into this middleware.

Sales are a critical part of many companies, especially within ISP’s. The importance of the middleware was that it combined the necessity of the sales as well as helped the tier 3 agents sell services to the customer while assisting them with their technical issues. The middleware would verify the services the customer already received and then would recommend an up-sell for the tier 3 agent to present to their customer. When sales and service are the key component of an employee’s job, the middleware helps the employee save time by showing the employee what services the customer might need or want instead of the employee accessing multiple applications to find out what the best solution for the customer would be.

Smaller, but still very significant features were added to this middleware. One such feature is the outage. Once a tier 3 agent accesses a customer’s account, they will immediately be notified, across the top of the screen, of an alert feed that would scroll when there was an outage reported
in the area. This allowed the tier 3 agents to inform the customer immediately and there-by saving time on the phone and keeping their handle time to a minimum.

The outage alerts are not the only messages to scroll across the top of an agents screen; there are others that scroll through as well. There are message scrolls to inform the agent if/when the customer was past due on their account or if they were locked down due to a billing issue. Although this may seem menial, many hours and a lot of the agent’s time are wasted trying to trouble shoot a customer’s problem; which in the end were found to be a billing issue. By having the billing status to be seen immediately, it allows the agent to rule this part of troubleshooting out immediately and therefore saves time and confusion.

Data

The first version of the middleware, discussed in this paper, was put into effect in January 2010. Prior to January 2010, there were beta trials. These trials were run in real time and tier 3 agents were required to input data in the middleware as well as in the original applications. It should be noted that this data will not be used in this paper.

The data presented in this paper was collected over a 2 year time frame; beginning in January of 2010 and running through December 2011. The data looked at the amount of calls that were presented to the tier 3 department and are labeled “Calls Offered.” The other data that will be reviewed is the amount of time an agent needs to be with a customer on the phone and will be referred to as “Average Handle Time.”

![Average Handle Time 2010 and 2011](image-url)
The data above looks at the average handle time, per month, of the tier 3 department. The data shows a significant drop in handle times starting in January of 2011 compared to the handle time of 2010. Overall the improvement in handle time from 2010 to 2011 was about a 21% improvement in handle time. Excluding the data in April, September & October 2011, there was a significant decrease in handle time. The increase, of these three months, was no more than two seconds. The overall handle time for 2010 was 11:16 in turn the average handle time for 2011 was 11:03. This is a 00:13 improvement in handle time year over year. This may seem like a small decrease, but for a call center, this is a significant reduction.

While reviewing this data, there are other factors that need to be considered. The tier 3 department was offered 61,326 more calls in 2011 as compared to 2010. By combining the major software used on a day to day basis under a middleware application an IT call center can handle an increase in calls while keeping their overall handle time down.

### Calls Offered 2010 and 2011

<table>
<thead>
<tr>
<th>Calls Offered</th>
<th>2010</th>
<th>2011</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>640,000</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>740,000</td>
<td>760,000</td>
</tr>
</tbody>
</table>

**Similar work**

There are many factors that help reduce handle time in a call center environment and therefore it is understood that combining software is not the only reason that handle times are reduced in call centers. In Gunnar Ingi Omarsson’s paper *Knowledge Management in an IT-Help Desk Environment*, Gunnar claims that the long times on the phone are due to a lack of knowledge. The root of these problems can be found in a lack of knowledge. More and more problems are becoming solvable by 1st level support (IT – Help Desk). This is a major problem with IT help desks especially at the tier one level. Many of the agents are hired without full knowledge of troubleshooting which leads to transfers to other tiers which in turns make the customer wait longer periods of time. A knowledge database is a very important part of any call center and needs to be maintained for it to be successful, but a knowledge database is not the only thing that can reduce time on the phone.
In Jon Rimmer & Ian Wakeman’s *Who Helps the Helpers – Technological Change in the Help Desk* looks at how the introduction of new technology disrupts the relationship between people and various databases and how this results in the loss of efficiency and negative effect upon morale of the staff [6]. This is an important factor in a successful call center that many seem to overlook. You can have the best practices and procedures put into place but if you have low morale within the department then your department will suffer. Keeping your employees motivated and happy is another key in decreasing handle time and improving efficiency.

In David Schuff and Robert St. Louis paper *Centralization vs. Decentralization of Application Software*, they look at both aspects. It is important to note that one of their benefits for pro centralization is that due to the increasingly complex corporate networks it becomes essential to simplify the management and administration of the network by centralizing applications. [7] This is a great benefit of centralizing application software.

**Considerations**

We must take into consideration the other side of the argument; there are a few down-falls to combining software. First, centralization means one point of failure. If the middleware application goes down then many tier 3 agents are unable to perform their jobs. Only a handful that have been trained on the individual software can stay up and running while the middleware has failed. Second, miss reporting can occur. In some cases it has been identified that one application may report one issue while another application may report the opposite. For example one application may produce an “Offline” piece of equipment while another shows it is “Online”. This can create a waste in both time and money for the company. If an agent accepts the “Offline” status and schedules a trouble call for a technician to go to the customer’s site and upon arrival the technician realizes that the issue is just an online modem. The tech must then call in and troubleshoot the issue over the phone if they are unable to fix the problem on the scene. This not only results in a wasted trouble call, that could have been beneficial elsewhere, but it also wasted a lot of time; both on the phone and that of the customer.

**Conclusion**

The IT help desk position, for an internet service provider, is a complex part of its business model. Many matrixes dictate the service level and the customer experience, none more than handle time. As we have shown, combining the major applications, used to handle day to day troubleshooting, can greatly decrease the handle time for the agent; which allows them to increase the number of calls he or she takes. This not only allows for greater efficiency of the call center but also shorter hold times for customers.

We looked at the software that was combined and showed how the handle times, over a two year period, were greatly reduced by this combination. Not only was the handle time lowered through this combination, but it allowed for an increase in the overall call volume and less of a hold time for customers that are holding.
We also looked at some considerations and recognized that handle time, itself, is not the only factor that improves handle times. We looked at the work of others to show that combining software alone is not the only way to reduce handle time.

References


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