CHAPTER-3
RESEARCH METHODOLOGY

The previous chapter provides a broad picture of the current state of research in contemporary Human Resource Development practices, in service industry and even in the shipping industry. In this chapter the research methodology, its appropriateness, validity and reliability issues, and its particular research paradigm will be discussed and suitability described.

The purpose of this study has been to closely study the overall workings of Shipping Multinational Companies, and to examine the usage and application of various HR strategies, policies & practices aimed at strategizing the business policies and thus implying to achieve organizational excellence. It also examines the relevance of HR strategy in relation to HR functions being employed in their work philosophy and the relationship of HR functions with their business & business strategy in terms of corporate excellence. This chapter will provide a detailed context as to how the research for this study has been conducted. The chapter contains a description and/or definition of the nature of the study, population and sample; the recognition of the use of human subjects; instrumentation; data collection methods; and concludes with the analytical techniques to be employed.

Research questions

In following sections, the different steps of the research process are briefly outlined. Beginning from the justification of the used research paradigm, the sections explain the research methodology and design while providing a reasonable overview about the sampling and data collecting and evaluating methods followed. The chapter further describes the sampling procedure and the additional fieldwork that was necessary to obtain sufficient responses. Various in-house preparatory steps such as editing and coding of the data as well as the methods of analysis used are briefly noted. Finally, the ethical aspects in business research and impeding factors those confine the scope of this research have been highlighted. The following chapter refers to the data
analysis process and outcomes, based on which the perceptions of managers relating to HR practices and diversity climates are determined and discussed.

**Research Design Model**

For this proposed study, the researcher has conducted a review of the relevant literature on the following themes: (1) Strategies pertaining to Human Resource Development; (2). Human Resource Development Strategies for the Service industries; (3) Constituent components of Human Resource Department; (4) Human Resource Department and Organizational performance; (5) Human Resource Strategies in Shipping industry. The Literature review uncovered a few kinds of research designs. Most of them sought to identify components of HR and the studies were qualitative in nature. Qualitative designs permit participants to respond in their own words and therefore provide the opportunity to capture more than standardized categorical responses. However, the time-consuming nature, the demand for repeated contact with participants for verification purposes, and the small sample size associated with qualitative designs have been drawbacks to using this design method in this proposed study.

In contrast to qualitative research, some quantitative designs are not conducive to examining the variables of interest in this study because manipulation of the naturally occurring variables of HR function, HR Department and organization performance and human Resource strategies is impossible. These reasons make the use of certain experimental quantitative designs unethical. In light of the aforementioned limitations, and the researcher's intent to describe and investigate the relationships among the independent and dependent variables, and to describe and investigate the potential effects of HRD in shipping industries, the researcher has used a correlational, cross-sectional survey design. This type of design permits the one-time collection of responses in a large sample. This research design will allow the researcher to fulfill the study's purposes of investigating the relation between multiple dimensions of HRD and assessing the perceptions of HR professionals on that relationship.
The co-relational design used in this proposed research has followed a five-step model of co-relational research. The first step has been the identification of an appropriate research problem. The next four steps follow in the below order (a) identify variables to be included in the study, (b) identify the appropriate research participants, (c) collect quantifiable data, and (d) analyze the data and interpret the results.

A conceptual model of the topic of the study is given above.

A quantitative survey design supports reviewing and exploring HR professionals' perceptions of HR function and strategies, policies and organization performance in shipping industry. The questionnaire measures factors perceived to be important and component factors. These factors will be quantified using a Likert-type scaled question format. Spearman's Rho correlation will be used to provide insight into the positive or negative relationships between HR function and strategies, and organization performance.

**Hypotheses**

The purpose of this study has been to find the relation between the following dimensions within a HRD system of a shipping multinational company by evaluating the frequency of people problems with respect to other resources, the impact of increased stress on total quality management or business excellence, on the variation of the respective people related problems etc. In line with this, the following hypotheses are formulated:

$H_01$: *There is No Association between the Level of Satisfaction and Type of Organisation.*

$H_{11}$: *There is an Association between Level of Satisfaction and Type of Organisation*

$H_02$: *There is No Association between Level of Satisfaction of HR Planning and Type of Organisation.*

$H_{12}$: *There is an Association between Level of Satisfaction of HR Planning and Type of Organisation.*
$H_{03}$: There is No Association between Level of Satisfaction of Appraisal System and Type of Organisation.

$H_{13}$: There is an Association between Level of Satisfaction of Appraisal System and Type of Organisation.

$H_{04}$: There is No Association between Level of Satisfaction of Motivation and Type of Organisation.

$H_{14}$: There is an Association between Level of Satisfaction of Motivation and Type of Organisation.

$H_{05}$: There is No Association between Level of Satisfaction of Learning and Development process and Type of Organisation.

$H_{15}$: There is an Association between Level of Satisfaction of Learning and Development process and Type of Organisation.

$H_{06}$: There is No Association between Level of Satisfaction of HR climate and Type of Organisation.

$H_{16}$: There is an Association between Level of Satisfaction of HR climate and Type of Organisation.

$H_{07}$: There is No Association between Level of Satisfaction and Experience.

$H_{17}$: There is an Association between Level of Satisfaction and Experience.

$H_{08}$: There is No Association between Level of Satisfaction of HR Planning and Experience.

$H_{18}$: There is an Association between Level of Satisfaction of HR Planning and Experience.

$H_{09}$: There is No Association between Level of Satisfaction of Appraisal System and Experience.

$H_{19}$: There is an Association between Level of Satisfaction of Appraisal System and Experience.
\( H_010: \) There is No Association between Level of Satisfaction of Motivation and Experience.

\( H_{10}: \) There is an Association between Level of Satisfaction of Motivation and Experience.

\( H_011: \) There is No Association between Level of Satisfaction of Learning and Development process and Experience.

\( H_{11}: \) There is an Association between Level of Satisfaction of Learning and Development process and Experience

\( H_012: \) There is No Association between Level of Satisfaction of HR climate and Experience.

\( H_{12}: \) There is No Association between Level of Satisfaction of HR climate and Experience.

\( H_013: \) There is No Association between Level of Satisfaction and Age Group.

\( H_{13}: \) There is No Association between Level of Satisfaction and Age Group.

\( H_014: \) There is No Association between Level of Satisfaction of HR Planning and Age Group.

\( H_{14}: \) There is No Association between Level of Satisfaction of HR Planning and Age Group.

\( H_015: \) There is No Association between Level of Satisfaction of Appraisal System and Age Group.

\( H_{15}: \) There is an Association between Level of Satisfaction of Appraisal System and Age Group.

\( H_016: \) There is No Association between Level of Satisfaction of Motivation and Age Group.

\( H_{16}: \) There is an Association between Level of Satisfaction of Motivation and Age Group.

\( H_017: \) There is No Association between Level of Satisfaction of Learning and Development Process and Age Group.
$H_{17}$: There is an Association between Level of Satisfaction of Learning and Development Process and Age Group.

$H_{18}$: There is No Association between Level of Satisfaction of HR Climate and Age Group.

$H_{19}$: There is an Association between Level of Satisfaction of HR Climate and Age Group.

$H_{19}$: There is No Association between Level of Score of HR Functioning and Type of Organisation.

$H_{19}$: There is an Association between Level of Score of HR Functioning and Type of Organisation.

$H_{20}$: There is No Association between Level of Score of HR Functioning and Experience.

$H_{20}$: There is an Association between Level of Score of HR Functioning and Experience.

$H_{21}$: There is No Association between Level of Score of HR Functioning and Age Group.

$H_{21}$: There is an Association between Level of Score of HR Functioning and Age Group.

$H_{22}$: There is No Association between Level of Score of HR Career Planning and Type of Organisation.

$H_{22}$: There is an Association between Level of Score of HR Career Planning and Type of Organisation.

$H_{23}$: There is No Association between Level of Score of HR Career Planning and Experience.

$H_{23}$: There is an Association between Level of Score of HR Career Planning and Experience.
$H_0^{24}$: There is No Association between Level of Score of HR Career Planning and Age Group.

$H_1^{24}$: There is an Association between Level of Score of HR Career Planning and Age Group.

$H_0^{25}$: There is No Association between Level of Score of HR Organisational Values and Type of Organisation.

$H_1^{25}$: There is an Association between Level of Score of HR Organisational Values and Type of Organisation.

$H_0^{26}$: There is No Association between Level of Score of HR Organizational Values and Experience.

$H_1^{26}$: There is an Association between Level of Score of HR Organizational Values and Experience.

$H_0^{27}$: There is No Association between Level of Score of HR Organizational Values and Age Group.

$H_1^{27}$: There is an Association between Level of Score of HR Organizational Values and Age Group.

$H_0^{28}$: There is No Association between Level of Score of HR Communication and Type of Organisation.

$H_1^{28}$: There is an Association between Level of Score of HR Communication and Type of Organisation.

$H_0^{29}$: There is No Association between Level of Score of HR Communication and Experience.

$H_1^{29}$: There is an Association between Level of Score of HR Communication and Experience.

$H_0^{30}$: There is No Association between Level of Score of HR Communication and Age Group.

$H_1^{30}$: There is an Association between Level of Score of HR Communication and Age Group.
Justification of the scientific research paradigm

Realism, also called post positivism is the conceptual research framework under which this study was conducted. This paradigm, among the four scientific enquiry paradigms - positivism, critical theory, constructivism and realism - is often adopted in the context of business management and marketing research issues. Paradigms are regarded as “the basic belief systems or worldview that guides the investigator” (Guba & Lincoln 1994, p. 105). Realism research discovers knowledge of the real world by naming and describing broad, generative mechanisms that operate in the world (Healy & Perry 1998). The questions to be answered are how and why variables related to HRD manifest in one or other form do. Organizational diversities are complex phenomena raising complex situations. To explain such phenomenon realism or post positivism is suitable research paradigm (Yin 1994).

Literatures suggest positivism as a suitable and most used alternative paradigm in survey methodology (Guba & Lincoln 1994; Neumann 1994). Hence it could be argued that a positivism approach would be more appropriate than the realism approach. This is debatable but also refutable in the research context. Positivism paradigm expects the researcher to deliberately keep distance from the sample and be fully uninvolved (Perry, Riege & Brown 1999; Yin 2003). This perspective is valid when the sampled population has common characteristics. For instance, studying consumer preferences of one category of people in one country using anonymous survey documents under positivism paradigm would be an appropriate methodology. But studying perceptions of people in differing societal, cultural and geographic environments needs objective interaction of the researcher with the samples. Such an approach comply more with realism paradigm.

The research process also provided evidence to the suitability of the realism paradigm. The initial attempt to collect data by mailing the survey questionnaires turned to be ineffective. Very few managers mailed back the
Consequently appointments were arranged with company managers and during these personal meetings the survey questionnaires were handed out to the managers and were requested to complete the survey. From the majority of the managers (97) the completed questionnaires were collected personally at end of the meetings while a few of them returned their responses a few days later.

Further, the “best international HRD” study also delivers additional justification to the realism paradigm. The involvement of researchers in the respective countries and their acquaintances with the country is noted as a contributing factor (Geringer et al. 2002). Realism and positivism could also be seen as complementing paradigms. Being involved in the research process and using quantitative data need not necessarily contradict each other as Miles and Huberman (1994) point out. “Practical research at the working level” tends towards one paradigm while including elements of the others (Miles & Huberman 1994, p.4).

This research attempts to understand the perceptions of people about HRD practices and Shipping Multinational Companies. Perceptions are based on personal convictions and need not be reality. In realism context, reality is imperfectly apprehensible (Guba & Lincoln 1994). The Realism paradigm allows researchers to extract a picture of reality from expressed perceptions. “Realism relies on multiple perceptions that involve triangulation of several data sources and of several peer researcher’s interpretations of those triangulation” (Erwee 1999, p.6). Since in this study, the perceptions of managers are used to explore and explain concept of HRD practices in Shipping Multinational Corporations, the realism paradigm can be justified as appropriate.

The realism framework also helps to understand the common reality of an economic system in which many people independently operate (Perry, Riege & Brown 1999). Shipping Multinational Companies included in this research represent such economic systems wherein people, their perceptions, actions and behaviors constitute the core components of
HRD in their respective organizations. However, “perception is not reality as constructivists and critical theorists view, instead for realists it is a window on to reality through which a picture of reality can be triangulated with other perceptions” (Perry et al. 1999, pp. 18).

Triangulation is a combination of different methodological techniques to overcome weaknesses of any one specific technique (McPhail 2003). The research design uses a survey and in-depth interviewing techniques for data collection implying use of quantitative and qualitative methods. Realism better accommodates both approaches and is more appropriate than the other scientific paradigms facilitating the researchers to collect information and perceptions of people without having control over the behavioral aspects of the sample (Yin 1994). As the purpose of this research being to explore perception of HRD practices, the quantitative and qualitative methodologies are relevant. Finally, realism or critical realism paradigm is most accommodative to quantitative and qualitative approaches. While being different from positivism and constructivism, it has some elements of both (Perry et al. 1999). The fact that the survey instrument, generally defined as a research tool in quantitative techniques substituted interview protocols, usually used in qualitative research, further underpins the practical relevance of the realism paradigm to this study. This research incorporates triangulation and interpretation of research issues by quantitative and qualitative methods. Of late, this combining approach is debated as “mixed methods of research” and many investigators help advance this concept by its regular practice (Burke Johnson & Onwuegbuzie 2005, p.14).

Nature of the Study

This is a quantitative research study that will analyze the relation between the dimensions within a HRD System of a Shipping Multinational Company. To examine this relationship, a targeted population of HR professionals was asked to complete a self-report data collection instrument to measure HR planning, potential appraisal, recruitment and selection, career planning role analysis, performance appraisal,
learning system, 360 degree feedback, HRD climate, organization development, communication, HRD function, compensation practice, workforce diversity and new human resources practices (Appendix A). This study is based on a correlation research design that is expected to demonstrate traits, abilities or conditions that correlate. This research uses predominantly quantitative survey method, but also integrates qualitative information gathered in personal meetings. The initial approach to collect data from managers and staff and also depth-interviewing selected senior HR managers was modified for practical reasons. Instead, the research focused only on the perceptions of HR managers of the sampled companies. Though the research was designed to collect data through conventional mailing, in practice the data collection was executed in personal interviews by getting the managers to complete the survey questionnaires during the interviews. In following sections other research elements such as sampling, questionnaire design, method of analysis and reliability issues will be described.

**Advantages of survey method**

One of the major strengths of survey methodology, in contrast to qualitative methods, is the generalisability of results (Gable 1994). “Generalisability refers to the scope of applicability of the research findings in one organizational setting to the other settings” (Sekaran 2000, p.24). In a study where the sample size is comparatively small, (the population of manufacturers in the auto industry is also small) attaining representative results is particularly vital to broaden the scope of applicability of the research. Next, surveys are relatively cost effective and can be executed in planned and structured manner. They permit accurate statistical and speedy analysis; given the survey design consists of carefully formulated questions to elicit non biased unambiguous answers. Since this research deals with companies in different continents and cultural influences, the survey method is justifiable in terms of cost and geographic application, unfortunately, only to a limited extent in this study. In general, mail surveys give the respondents a greater feeling of confidentiality due to anonymity and could be easy to complete. On the other hand, the survey technique also has some problems such as controllability and repeatability. For instance, once the survey instrument is underway, little can be done about issues such as omission of
crucial items or discovery of ambiguity or questions being misinterpreted and misunderstood (Gable 1994). Moreover, the responses may be a snap shot of a certain situation not reflecting the complexities or yielding little information about the underlying meaning of the data collected (Gable 1994).

**Questionnaire design - Quantitative data**

In the research context, quantitative techniques are used to investigate existing HRD practices. However, the validity of any research outcome from such techniques invariably depends on the quality of the data received and processed. Again, the quality of the responses, in verbal or documented form, is proportional to the probabilities of misinterpretation and ambivalence associated with the questions asked (Zikmund 2002). Therefore, questionnaires need to be meticulously designed to ameliorate any possible misconstruing of questions to substantiate validity and reliability of the results.

**Figure No.-3**

Stages of Development of the Research Questions

![Diagram showing the stages of development of research questions]

*Source: Developed by Buranajarakorn (2005)*
Data Collection Procedures and Rationale

The questionnaire (as given in the Appendix) was administered to the HR professionals in the current study, to enable a review of their perceptions of HR planning, potential appraisal, recruitment and selection, career planning etc (Totally 16 aspects). Part of the data collection phase entailed conducting a pilot study on the Demographic information and the survey of HR professional’s perceptions of HRD. For the pilot study the research has used a purposeful sampling, method to recruit 10 HR professionals. Purposive sampling is utilized in exploratory research (Neuman, 2006) when participants are chosen for a specific purpose (Leedy & Ormrod, 2005) from a predefined group. An international geographic population of HR professionals in shipping industry will be engaged, with the HR professional membership located internationally. The researcher has recruited the participants via mails or emails. This will contain directions for participating in the pilot study as well as the survey questionnaires. The questionnaire includes an e-mail address for participants to use if they have specific questions for the researcher.

The purpose of the pilot study was to ascertain whether the procedures for administration and the instruments work the way they are intended to. To test for their effectiveness, two pilot studies were compiled. Both were identical in design, but were tested differently (see Figure). Originally, fourteen companies were contacted to participate in pilot studies, but six declined. The first pilot study was conducted as face to face interviews with a designated company representative. This had a 100% participation rate. The aim was to analyse the time involved in answering each question and to note the level of difficult (E = Easy, M = Moderate, D = Difficulty) for each question. The second pilot study was mailed to different companies. This was a repeat of the questionnaire in the first pilot study plus an evaluation sheet. This was aimed at finding the total time of answering the questionnaire (less than 30 minutes, approximately 30 minutes and over 30 minutes) and which questions were difficult to answer. The total number of replies of this second pilot study was four.
Once the pilot study was completed, results reported, and the modifications made, the researcher commenced with the data collection for the actual research study. Similarly sample respondents were selected using purposive sampling. A sample size of more than 88 participants will be anticipated to ensure the power of study as 0.90 assuming that a Pearson correlation effect is 0.30, significance level is 0.05.

The Study of the Total Time of Completing the Questionnaire

The total time of completing the questionnaire was expected to be 30 minutes which was estimated to be the maximum time needed to answer questions in a mail survey (Sukarma, 2000). In the first pilot study, the results of the estimated time from the four respondents were 18 minutes 48 seconds, 12 minutes 17 seconds, 14 minutes 4 seconds, and 20 minutes 41 seconds. The average time to fill but the answers was 16 minutes and 23 seconds. The respondents evaluated response time as less than 30 minutes, but the other two took approximately 30 minutes. In conclusion, the respondents completed the questionnaire within the estimated time (30 minutes).

The Study of the Level of Difficulty of Questions

The evaluation of the level of difficult of each question brought varied results from the four respondents. The questions, which dealt with ranking, seemed to be more difficult than the open ended and ticking in the box. The easiest type of question was Yes/No. The four respondents from the second pilot study noted those questions which were most difficult to answer or unclear in intention, and suggested guidelines to improve these.
Reliability and Validity

The survey instrument should have validity and reliability. Validity is whether the instruments are really measuring what they are supposed to measure. Reliability means that the survey instrument is providing a consistent measure. This survey instrument measured what it claimed to be measuring thus providing a consistent measure indicating that the survey instrument was a valid and reliable instrument. In evaluating studies several methodological concerns emerge. Perhaps most important are reliability and validity. Reliability of a study depends on the measures of constructs or concepts developed for the investigation (Churchill 1979). Measurements can be single-item or multi-item measures. Single-item measures (single questions) of constructs of multiple characteristics are prone to measurement errors. For concepts having a number of similar and dissimilar features such as HRD constructs, the focus of this research, multi-item measures serve better to understand these concepts. In other words, the number of items to measure a single phenomenon is increased to build a stronger measure leading to better reliability. Reliability tends to increase as number of items in a combination increases (McPhail 2003). Reliability assessment is a core component of social and marketing research and can be incorporated easily into direct observations for determining optimal levels of performance. However, only 48% of the studies (excluding those using computerised assessment) reported reliability measures on the comparison assessment. Results were worse for assessing the social importance of the effects (28% reporting reliability) the social significance of the goals (4% reporting reliability), and validation of the appropriateness of procedures (8% reporting reliability). Several procedures have been used that can provide reliability of the questionnaire measurement methods (Peter 1979) including test–retest odd–even, Kendall's coefficient Pearson r coefficient and the equivalent-forms method. Social validation procedures are valid to the extent that they measure what they claim to measure. It is critical that good internal and external validity be estate" fished for social validation procedures. The external validity of the assessment procedures reviewed here is questionable. The dimensions researchers believe they are measuring may have little relation to what is actually being measured and that face validity is inadequate as the sole criterion for evaluating the validity of assessment devices. (McClintock 2005: 13-33)
One way to assess validity would be to have the social validation assessment developed or reviewed by a panel of "experts" or judges who are not involved directly in the research. Another method would be to have a social validation assessment of the social validation instrument. For instance after responding to a questionnaire raters would respond to a second questionnaire that told them the purpose of the first questionnaire and asked them to rate how well they thought the questions assessed the purpose. In addition researchers need to be aware of halo effects biases toward leniency or severity, central tendency responses and position or proximity biases of raters which may artificially enhance the reliability of measurement without improving response accuracy or validity. A study can be reliable but not valid and it cannot be valid without first being reliable. We cannot assume validity no matter how reliable our measurements are. There are many different threats to validity as well as reliability, but an important early consideration is to ensure we have internal validity. This means that we are using the most appropriate research design for what we’re studying (experimental quasi-experimental survey qualitative or historical) and it also means that we have screened out spurious variables as well as thought out the possible contamination of other variables creeping into our study. Anything we do to standardise or clarify our measurement instrument to reduce user error will add to our reliability. There are four good methods of measuring reliability: Test-retest multiple forms interrater & split-half. As well as there are four good methods of estimating validity: face content criterion & construct. We often try to do it in a way that enables us to make statements about people at large. How well we can do this is referred to as study’s generalisability. A study that readily allows its findings to generalise to the population at large has high external validity. To the degree that we are successful in eliminating confounding variables within the study itself is referred to as internal validity. External and internal validity are not all-or-none black-and-white present-or-absent dimensions of an experimental design. Validity varies along a continuum from low to high. For this reason, cronbach alpha(α) has been computed for the entire data set of 69 questions and the figure is 0.838. For each of the internal groups it is 0.69, 0.79, 0.82, 0.70 respectively.

For validation purposes sample questionnaire was submitted to the panel of "experts" who were not involved directly in the research. After their approval, the survey was
conducted with two respondents. After the questions were answered the researcher asked the respondents for any suggestions or any necessary corrections to ensure further improvement and validity of the instrument. The researcher again examined the content of the questionnaire questions to ascertain the reliability of the instrument. The researcher excluded irrelevant questions and changed words that were deemed difficult by the respondents. The questionnaire, a tested survey tool employed in prior international and cross-cultural research studies, can be deemed as a reliable instrument. Beyond this, using tested instruments offer a few more advantages. It allows easier detection of similarities and differences of the results of the studies and thus contributes to broader scientific understanding of the research question. The research processes, such as sampling, data collection and analysis can be constructed around a valid and tested methodology. The difficulties and problems while conducting cross-cultural studies can be countered more effectively. This, however, depends on the accessibility to previous researches and the consent from the researchers to use the outcomes of their study.

Minimising survey errors

Survey research is basically a primary data collection method from a sample population using questionnaires and is susceptible to various forms of errors. If not avoided, these would diminish the validity and reliability of the research. Survey errors are classified as random sampling and systematic errors. Since the sample companies are part of a larger population, random sampling error may arise. Systematic errors emerge when the research design is imperfect or executed improperly (McPhail 2003). These are based on respondent’s indifference (non-response) and bias or researcher’s administrative flaws. To prevent non-responsiveness, all participants were informed about the purpose, procedure and the possible benefits of the research to their organisations in form of an introductory letter prior to questionnaire mailing.

At this point, it is denoted that despite taking the aforementioned measures, the initial response rate was low and it was decided to interview managers personally and getting the managers to fill the survey questionnaires during the interview. Though the cost impact was considerable, the method ultimately contributed to minimise survey
errors. Beyond this, measures such as second contacts, incentives and respondent friendliness (McDaniel & Gates 1999) which encourage the sample to respond, was also practised. Finally, to ensure the error free and complete direct data entry to the computer, some randomly selected entries from the SPSS master file were visually cross-checked against the corresponding ratings in the questionnaire.

The design of the questionnaire is a major determinant factor for error free measurement. Self administered questionnaires are often used by HRM consultants and managers to understand employee perceptions (Zikmund 2002). Many aspects of the questionnaire can be shaped to create trust and influence respondents (Dillmann 2000). Using two well tested survey instruments and face to face interaction with managers helped to create trust and contributed to minimise survey errors. And finally, a strategy used to increase accuracy and relevance of questionnaires was pre-testing. Pre-testing is a process to reduce problems relating to the content of the questionnaire (McPhail 2003). Although tested instruments, the drafts of the questionnaires were presented to a research professional, two experienced HR managers and a peer student of DBA for initial screening. Observing the above mentioned measures contributed to enhance the validity and reliability of this research.

Data Types

Ordinal data has been collected on the perceptions of the HR professionals. The HR professionals’ perceptions provide insight about the HRD functions, HR strategies, Policies and challenges of HRD in shipping industry. The Likert-type scaled questions generate ordinal-level data on factors identified in prior research. Although a mean of the question responses can be computed for informational purposes, statistical limitations exist for interpreting the results on ordinal variables.

Additional statistics were computed to augment affirmative responses: frequency counts, mean, median, mode, range, and standard deviation. A correlational analysis using Spearman’s Rho was performed to explore relationships between ordinal variables. Chi square tests as tests of association were also conducted to evaluate if there is an association between the responses in each group and the characteristicks of the organisations participating in the exercise, difference in perceptions and beliefs of HR professionals among Shipping Companies.
The appendix contains the complete questionnaire administered to the HR professionals. The review of the HR professionals' perceptions of HRD functions, HR strategies, policies, organization performance focuses on the responses to statements pertaining to the following dimensions within the HRD system of a shipping multinational company:

1. HR Planning
2. Potential Appraisal
3. Recruitment and Selection
4. Career Planning
5. Role Analysis
6. Performance Appraisal
7. Learning system
8. 360 degree Feedback
9. HRD Climate
10. Organization Development
11. Reward and Recognition
12. Communication
13. HRD Function
14. Compensation Practice
15. Workforce Diversity
16. New Human Resources Practices

Human Subjects

The questionnaire indicates consent and affirms the level of confidentiality provided to the respondent. By providing a voluntary response to the questionnaire, the respondent implies consent to use the data obtained. An introductory letter along with the questionnaire will provide a written explanation of consent by acknowledging the participant's understanding of informed consent and are found (Appendix)
respectively. Those participating in the research by completing a questionnaire will not be subjected to stress, psychological, social, physical, or legal risks greater than those encountered during a normal day. Information on how to contact the learner was provided in the introductory letter.

Confidentiality has and will be maintained, and no records will be maintained of e-mail addresses of respondents to the questionnaire. The introductory letter and the questionnaire indicates the importance of confidentiality and the means by which the researcher assures confidentiality to participants. Formal files and records for the study will be maintained as required by university and research standards for a minimum of three years without identifying addresses, organizations, or locations of the participant. Upon completion of the holding timeframe, paper copies will be shredded, disks will be destroyed through the use of a disk shredder, and computer files will be deleted. Privacy of information will be maintained throughout the holding timeframe, and no release of confidential information will be allowed without proper authorisation.

Data collection

The process of collecting primary data was the most difficult part of the research process. As briefly mentioned in the research design section, the mode of collection was modified because of low response. Although the recipients were pre-informed before posting or in several cases e-mailing the questionnaires, for various reasons just around 10 percent responded. Consequently, in follow-up contacts, the consents of managers for personal meeting were sought to collect structured data using the same questionnaires. This method was cost and time intensive, particularly because of geographic locations of the companies. Quite often rescheduling of meetings was required because of the unavailability of managers and international travel constraints thus stretching the time frame to over a year for executing all personal interviews.

Prior to distribution of the questionnaires, in formal meetings and remote correspondence, all concerned people were informed about the academic as well as economic value of the research, observance of anonymity and the confidentiality of acquired company data will be warranted in written form. The prospect of receiving a
free copy of the research report was used as a leveraging and motivating tactic to increase the response rate.

While the responses of managers to the two questionnaires were the main source of primary data for quantitative analysis, research relevant qualitative information of HR experts were also triangulated for drawing conclusions. Apart from these, secondary data was obtained from literatures, electronic media, prior research projects and similar academic publications.

| Table No.-1
Data Collection Schedule |
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Population and sampling

Once the research design is determined, the process of sampling follows (Zikmund 2000). The original plan was to sample all managers from multinational companies.

Selecting the sample population primarily amongst the Indian multinational companies and not including organisations in the other sectors was not considered as an appropriate approach in the research context for two reasons. First, such an approach ensures better comparability of the results obtained. Organisational structures, strategies, hierarchies and processes of manufacturing entities, particularly in the shipping, have more converging characteristics and could
differ significantly from that existing in service providing organisations such as the IT or telecommunication sectors. Hence collecting and using data and information from all types of shipping companies was deemed as a suitable methodology for this study. The second reason is embedded in the practicability of the data collection process. Unlike the multinational companies, indigeneous organisations usually have a concentration of managers and employees working at limited locations. In contrast, multinationals, by the nature of their business have a large number of offices with lesser number of employees at different locations. There is a larger spread or scattering of employees in the multinationals that makes the data collection process time-consuming and travel-intensive, especially in cross-country research. In other words, it is comparatively easier and cost-effective to collect research relevant data from the other companies, particularly when it involves personal meetings between the researcher and the samples in different countries. Furthermore, focusing on the other companies as well also contributes to enhance the overall reliability and validity of the study since the outcomes are more specific as a contrast to the multinational companies. Simultaneously, this approach offers additional opportunity for further research on HRM practices of shipping organisations within the service sector. The rapid growth of IT and telecommunication sector in India provides adequate justification for similar research studies.

To identify the firms, information from corresponding chambers of commerce as well as internet home pages were referred. As the research objective is to investigate HRD practices only such firms were classified as relevant and to ensure comparability, only companies with autonomous HR department and an overall employee strength of 200 and above considered.

From the total population some were selected as the sample and questionnaires mailed requesting for responses. Experiencing a very low response rate, as mentioned before, adjustments had to be made to the original sampling plan. As in the “BIHRMP” project (Von Glinow et al. 2002) convenience sampling and personal contacts was favoured instead of random sampling. The alternate strategy of personal interviewing using the two questionnaires as interview protocols, though associated with
additional travel time and cost, lead to substantial increase of the response rate. Table 2 shows the actual numbers of valid responses returned. Among the 298 questionnaires received back through e-mails as well as by normal mails, as well as personal interviews, thirty seven were discarded for incompleteness.

Table No.- 2
Category wise Questionnaire Administration

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Blank questionnaires administered and sent out</th>
<th>N-Usable questionnaires</th>
<th>% of usable questionnaires</th>
<th>Work Experience</th>
<th>Blank questionnaires administered and sent out</th>
<th>N</th>
<th>% of usable questionnaires</th>
<th>Age</th>
<th>Blank questionnaires administered and sent out</th>
<th>N</th>
<th>% of usable questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>100</td>
<td>42</td>
<td>42%</td>
<td>Less</td>
<td>250</td>
<td>133</td>
<td>53%</td>
<td>Young</td>
<td>200</td>
<td>103</td>
<td>52%</td>
</tr>
<tr>
<td>Private Sector</td>
<td>100</td>
<td>55</td>
<td>55%</td>
<td>Medium</td>
<td>150</td>
<td>65</td>
<td>43%</td>
<td>Middle</td>
<td>250</td>
<td>110</td>
<td>44%</td>
</tr>
<tr>
<td>Multinational</td>
<td>350</td>
<td>165</td>
<td>47%</td>
<td>High</td>
<td>150</td>
<td>64</td>
<td>43%</td>
<td>Elderly</td>
<td>100</td>
<td>49</td>
<td>49%</td>
</tr>
</tbody>
</table>

Data preparation and analysis

Before entering the collected responses for computing, the raw data needs to be prepared in a form and order to increase the usability and completeness. In following sections the process of editing, coding and analysis in the research context is explained.

Editing

First, the returned questionnaires were visually verified for completeness. In a few cases clarification of ambiguous answers was needed and undertaken while in three cases, due to anonymity of the respondents this was not possible. The data was then subjected to in-house editing in order to convert raw data into computable information (McPhail 2003). Editing is “adjusting data for omissions, legibility and consistency” (Zikmund 2002, p. 454). Given the predictable and manageable number of questionnaires, an editor’s manual was viewed as dispensable, though fixed rules were defined and observed.
Coding

Coding is a process of assigning numerical values or character symbols, generally to answers of the survey questions for subsequent computer based analysis. Particularly, in quantitative studies, it facilitates researchers to analyse and interpret meanings fast since computers can more efficiently manipulate numeric codes than alphanumerical language (Davis 1996). The questionnaires contain fixed alternative questions and the respondents are provided five response categories coded “one” to “five” for each question based on an attitude measurement scale. In addition, the coding procedures required for Statistical Package for Social Science (SPSS) was observed to conduct descriptive, frequency and correlation analysis as well as Chi-Square tests for significant differences.

The Role of the Researcher

As the primary instrument for data collection and analysis, the assumption is that the researcher may carry a certain amount of biases at the outset of the study. Locke et al. (1987) states that as long as the researcher is open about his or her own potential biases, his value and judgment of the study can be useful and positive. Stake (1995) has suggested that research is not helped by making it appear value free. The researcher values the input provided by the participants and the opportunity to collect their perceptions through both personal and telephone interviews. Great efforts were made by the researcher to be objective during the interviews.

First, as an HRD practitioner and graduate student in human resource development, the researcher's theoretical perspective on HRD concepts and practices has been developed based on the foundational theories that have been developed in the U.S. (E.g., Swanson and Holton, 2001), and so the researcher was careful not to put words in the interviewee's mouths when they were unable to find the adequate terminology to describe their experiences and not associate participants' experiences with the researcher's own experiences.

And second, the researcher was explicit and as self aware as possible about personal assumptions and biases and how they could come into play during the study. While the researcher was very explicit about his own cultural background during the
collection phase, a low level of personal exposure was maintained in terms of his political ideology. In spite of the present researcher's effort to maintain objectivity during the data analysis phase, the researcher's perspective on culture and political ideologies, organizations, and HRD substantially influenced the interpretation of the data gathered.

In terms of researcher's knowledge, skills and competence to conduct the interviews, Kvale (1996) proposed the following qualification of a good interviewer: being knowledgeable, gentle, sensitive, open, steering, critical, remembering and interpreting. With this in mind, the present researcher conducted the study with the following values: to be knowledgeable with the background literature, systematic in collecting data, objective interpreter meaning, and insightful in reporting findings. In order to assess the researcher performance, audiotape recordings and interview transcripts will be made available. Participants' own responses were used to provide direct data support for interpretations and a clear trail for all the study's assertions.

Data Analysis

The questionnaire responses provide review of data based on the perceptions of the HR function, strategies and etc. An assessment of the data and identifying the most important responses will provide the mean, median, and mode of the study. The design of the survey statements supports the ability to interpret data for analysis and review. The use of Spearman's Rho allows for comparisons of one ordinal variable associated with another to identify relationships through the analysis of quantitative data.

The questionnaire contains two parts. The first part includes demographic information of the organization. The second part includes 18 categories, 69 statements. Those statements are ranked on a Likert-type ordinal scale investigating the beliefs and perceptions of HR professions of HRD in shipping companies. The Likert-type scaled questions will be coded on a scale of 1 to 5, with 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. Missing values were assigned to N/A responses. Ordinal variables will allow for centricity evaluation initially and then for dispersion (Schmidt, 2008).
As the specific objectives of the research are to study existing HRD Practices – “Design of Questionnaire” as above, has been further classified as under according to Variables and Hypotheses.

### Table No.-3

**Cross Reference between HRD dimension groups & Questionnaire items**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Dimensions (independent, intermediating &amp; dependent) and Null Hypotheses (H0)</th>
<th>Set of Questions (Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Human Resource Planning</td>
<td>1,2,3,4,8,9,60,61</td>
</tr>
<tr>
<td>3.</td>
<td>Motivational Levels</td>
<td>3,34,43,44,45,46,51,52,57,69</td>
</tr>
<tr>
<td>4.</td>
<td>Learning and Development</td>
<td>5,15,23,24,25,26,27,30,35,37,62,63,64</td>
</tr>
<tr>
<td>5.</td>
<td>HR Climate</td>
<td></td>
</tr>
<tr>
<td>a)</td>
<td>HRD Functioning</td>
<td>32,53,54,68</td>
</tr>
<tr>
<td>b)</td>
<td>Career Management</td>
<td>10,11,12,14</td>
</tr>
<tr>
<td>c)</td>
<td>Organisational Values</td>
<td>38,39,40,41,42</td>
</tr>
<tr>
<td>d)</td>
<td>HR Communication</td>
<td>18,47,48,49,50</td>
</tr>
<tr>
<td>e)</td>
<td>Reference only ;to gather the opinion</td>
<td>13,22,29,36,59</td>
</tr>
</tbody>
</table>

After collating the results several parametric and non parametric statistical tests were employed to test the applicable hypothesis and to conclude their validation or otherwise. An overall representation has been given indicating the status of each of them which highlights the relevance of the responses received within the context of the Multinational Shipping companies.

Analysis process begins with entering of completed questionnaires containing “usable” data into SPSS. Descriptive analysis refers to the transformation of raw data.
into understandable and descriptive information and helps to understand how the sample population behaves and what its characteristics are. The intent of this study being to explore the differences across the two countries in terms of HRM practices and diversity climate, descriptive analysis techniques were used to determine differences within as well as between the two countries. The mean values, along with their standard deviations, for the respective items were compared to interpret differences for research issues one to five. Furthermore, to test significant differences of perceptions between the managers, Chi-Square tests within the cross-tab functions of SPSS were conducted using quantitative data. Chi-Square tests were undertaken for all the five research issues.

The design of the statements captures the beliefs and perceptions of HR professionals in the shipping industry. The data collected will generate insights into the beliefs and perceptions of the HR professionals in shipping industry. Data analysis will generate the average level of beliefs and perceptions of HR professionals on HR function, HR strategies and organization performance; the data analysis will also provide an indication, or absence, of an association, between the various groups, of different dimensions of HRD.

**Ethical considerations**

At the very outset of this section it need to be noted that this study, although business research, was carried out primarily to fulfill academic requirements. Consequently, it can be assessed that among the three participants, namely the researcher, respondents (subjects) and the non sponsoring shipping firms (potential beneficiaries), the latter two are free of duress and compulsion to pledge compliance. As the main stakeholder, the researcher was extremely concerned to observe all ethical codes of behaviour in personal interest, lest the outcome for the researcher will be detrimental. Even otherwise, the research methodology addresses caution to maintain privacy of the research subjects, protect confidentiality of the collected data and sources and exclude every possibility of psychological, physical and social risks to respondents. The researcher comprehends privacy as a basic right of every subject. No form of contacts with the respondents using obtrusive methods or tactics was exercised to coerce co-operation or participation. The methodology is based on
willing consent wherein the individual is expected to provide truthful answers without relinquishing confidentiality and anonymity (Zikmund 2003). Respondents’ rights to retreat at any time of the study without any form of adverse consequences to them is deemed as irrevocable and accordingly manifested. To warrant confidentiality, the researcher’s commitment in written form not to disseminate survey results to third parties was included in the questionnaires. Similar declaration was made also to the interviewed persons. In addition, the questionnaires contained neither names of persons nor respondent codes for observing principle of anonymity. This measure, though, was a constraint to follow up the recollection of questionnaires and needed clarification of respondents’ opinions. As counter measures to this limitation, detailed briefing about the questionnaire contents and the purpose of the research was provided to all participants and finally, the purpose of this research was explained without tactics of deception and concealment prior to data collection. The obligation of the researcher to be objective, unbiased and ethical in every step and at every stage of the research was contemplated as key to elicit co-operation and trust of the respondents.

**Limitations of the Research**

As in all cross-country studies, the language used is critical for reliable results. The management cadre generally has good English language proficiency but there were exceptions. This limitation also occurs in the Indian context, though the working population has sound English language skills. Such situations where the English language appeared to be an impediment, the questionnaire in the local language was provided using the method of back translation to eliminate misinterpretation of meanings. Second, cultural divergences may also conjure differing attitudes and opinions to same subject of inquiry. Such occurrences can affect researcher’s interpretation of answers (Beardwell & Holden 1996) leading to discrepancies in the deductive reasoning of results. The researcher’s work experience and affiliation to the shipping industry helped to ameliorate the negative impacts on content validity. Another limitation was the low number of specific studies or comparative analysis conducted until now. This situation implies that it is difficult to compare the current study’s results with appropriate comparison research. As assumed in the “best
practices project”, collecting data solely from managers is expected to improve comparability (Geringer et al. 2002).

Conclusion

The research methodology chapter explains the important elements and activities of this study to a reasonable length. Beginning with the objectives of and the principles on which the entire research study is based and the design and the considerations in implementing the instrument used in this study, it provides the justification to the realism paradigm adopted and outlines the methodology. In subsections of the research design, deliberations relating to reliability and validity issues and advantages of the survey methodology have been are provided. It also discusses the questionnaire design and substantiates its relevance while explaining the measures followed to minimize survey errors.

Summary

A quantitative research approach will be used to assess the believes and perceptions of HR professionals about the HR function, HR strategies, HR policies and organization performance in shipping industry. The methodology supports generating insights on the average belief and perception of HR professionals on HR function, HR strategies, HR policies and organization performance in shipping industry; this also allows the researcher to evaluate the relations between the multidimensions of HRD in shipping industry. The application of a quantitative approach provides a means of collecting data not available in prior qualitative or quantitative studies. The data to be collected will provide for future opportunities and provide a foundation for future research on HR function, HR strategies, HR policies and organization performance in shipping industry. The quantitative data analysis and results will be presented in next chapter.