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I am submitting herewith a thesis written by Karima Tayeb entitled “Factors that Affect the Perception of Company Success by Assembly Workers in the Boat Industry.” I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Industrial and Information Engineering.

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**Factors that Affect the Perception of Company Success by Assembly Workers in the
Boat Industry**

A Thesis
Presented for the
Master of Science Degree
The University of Tennessee, Knoxville

Karima Tayeb
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ABSTRACT

Employee retention is critical to an organization's competitive position. Employees are resources; and a "good" employee is a valuable asset. From a system's perspective, employees are critical elements that are needed to ensure the output can be produced effectively and efficiently. Thus, management of this resource is critical for a company's success. Maintaining a stable workforce in the boat manufacturing industry is a challenge. This is especially true in the assembly area where the average job is unskilled and not considered a career position. The purpose of this study is to identify the individual and organizational factors that contribute to high turnover in the boating industry. This study investigates employee perceptions about the work and management based on a satisfaction survey; and identifies which factors create the most dissatisfaction and lead to turnover.

The study used the survey method to collect data from assembly workers of four different companies in the boating industry. A 32-item survey, which measures attitudes and perceptions about the organization, was developed and administered by HR specialists at each company. Results showed that encouragement of suggestions, communication, and involvement in the change process had the greatest impact on employees' perceptions of a company's long-term success and those perceptions are highly influential in predicting voluntary exit.

DEDICATION

This thesis is especially dedicated to my wonderful and loving parents, Ibrahim and Khadija Tayeb, who have gave me life and raised me to be the person I am today. You have been me in every step in my life. I do thank you for your unconditional love, guidance, and endless support that you always given me, helping me to succeed and instilling in me the self-confidence that I am capable of doing anything I put my mind to. Thank you for everything. I love you all so much!

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Chapter I Introduction

Today's companies are facing severe competitive pressures and rapidly changing markets. Most of these changes involve new trends and technologies; some, however, involve changing attitudes of employees, and require new management approaches in response. Failure to respond could lead to increased turnover, decreased productivity, and ultimately closure.

There is a general view that a company's viability is contingent upon creating a product that customers want, getting it to market ahead of competitors, and doing it at minimal cost. Employees play a major role in each of those steps. Thus, having a steady reliable work force is critical to a company's success. "The most serious issue for employers today -in all industries- is hiring and keeping qualified and capable employees" according to Donald Marshack, senior analyst at the U.S. Bureau of Labor Statistics (BLS) (2000) – in other words, "turnover". (Throughout this research turnover is being used to refer to voluntary separation.) This is an issue because it affects productivity, quality, and costs – key success factors for a company's long-term success.

This research investigates this issue for the boating industry. It investigates the relationship between employee turnover and their perceptions of the company's long-term success. As employee turnover is directly correlated to company's long-term success, this study will identify and validate the main variables that affect employees' concerns about a company's long-term success and lead to employee turnover.

Problem Statement

This study investigates what employee perceptions about the work, management and company's success, based on a satisfaction survey, create the most dissatisfaction and lead to turnover. It recognizes that there are factors relative to the work environment, the work processes, and the employees that lead to dissatisfaction and exit from employment.

Unexpected departures impact both short-term and long-term plans, and require unexpected adjustments. These adjustments can be costly. According to Mushrush (2002), "it has been estimated that on average, it costs a company one-third of a new

hire's annual salary to replace an employee". There are direct and indirect costs associated with employee turnover costs, and these may affect the organization's profitability and the survival of the company. In fact, the adjustments for turnover may also affect the work environment, the work processes, and the remaining employees.

Thus, this is not a trivial concern for manufacturers. According to the BLS, employee turnover in the manufacturing industry was 31.5 percent in 2006. Due to the fact that no statistics were published to the public about the boating industry and the high cost of the reports; it was not possible to get any statistics on employee turnover regarding this business. Also, employee turnover in manufacturing industry has a major effect on quality and costs (Horne, 2002). To answer the question why employee turnover is high in the boat industry, research is being conducted to determine the primary factors that lead to low retention in the assembly department of several manufacturers.

Research Approach

This research consists of two parts. The first part is the development, administration, and results analysis of a survey that can help organizations identify employees who are dissatisfied. (In this case, it was a modification of an existing survey used by one of the respondents and an on-line sample survey (baldridgeplus.com). The second part of this study consists of developing recommendations for the development of change management programs for each of the identified characteristics or situations that lead to turnover. Accordingly, the primary study was organized into the following steps:

1. From the literature, compile a comprehensive list of factors that contribute to turnover.
2. Based upon the literature results, build a research instrument that measures dissatisfaction and ultimately lead to turnover.
3. Have the companies administer the research instrument to a group of employees in the assembly area to assess their degree of satisfaction.
4. Through the data collected, refine a model by correlating the perception of company's success variable with other variables in the survey.

5. Create and validate a regression model to predict expected turnover, based on the direct correlation of satisfaction to turnover to expected long-term success of the company.
6. Make recommendations for the development of change management programs to address the factors identified as affecting employees' perceptions of long-term company success, leading to employee turnover.

Context of the research

Employee turnover affects a company's bottom line. It costs the manufacturing industry thousands of dollars every year. According to SHRM, the Society for Human Resource Management, it costs \$3,500.00 to replace one \$8.00 per hour employee (Ross Blake, 2006). Thus, according to the Bureau of Labor Statistics, the average direct costs associated with the search and selection of a new employee will cost up to \$13,996 (O'Connell, 2007). However, the indirect costs may be even more surprising. In another study, "the average cost to replace a person paid \$25 per hour can be as much as 85% of this position's salary or \$45,000. Other related costs are hiring costs which can be up to \$8,000 or \$20,000 if an agency is used; training costs, which sum up to a total of \$7,000; and lost productivity costs, which add an additional cost of \$17,000 (Bliss & Associates).

Significance of this Research

The recreational boating industry is a substantial contributor to the nation's and the state's economy with national sales of recreational marine products and services of over \$37 billion in 2005 alone (NMMA, National Marine Manufacturers Association). There are currently 1,486 boat manufacturing facilities in the United States with only three states and the District of Columbia being without at least one boat manufacturing plant. In its 2002 report of *U.S. Recreational Boat Registration Statistics*, the NMMA listed Tennessee as the 18th state for national registrations of recreational boat users – providing 2% of the national total. In the state, specific numbers for the boating numbers are not provided by the Department of Economic and Community Development (see: http://www.state.tn.us/ecd/research/labor_profiles/manufacturing_profiles/index.html), but the site does report that manufacturing composed 22% of the state's gross product in

2006 and provided 15% of its employment. The site also lists Sea Ray Boats of Knoxville as one of the state's top 50 manufacturers at #32.

The vast majority of boat builders are small, privately owned businesses. Their long-term success depends on addressing problem areas immediately. One of which is voluntary turnover. Voluntary turnover can induce potential costs to organizations in terms of loss of valuable human resources and disruption of ongoing activities (Cascio, 1991; Trevor, Cerhart, & Boudreau, 1997). Most boat manufacturers can not afford to incur this cost over a long period of time and experience long-term success.

Limitations

The sampled population is limited to fulltime assembly employees who work in the boat manufacturing industry. This work area was identified to be of major concern, as opposed to the lamination area that the National Marine Manufacturers' Association (NMMA) has cited as having the highest turnover rate in the industry. The study includes two sub areas in the assembly department, which are "rigging" and "final finish". This research was limited to the category of powerboats industries and excludes from this grouping all companies that manufacture yachts. As well, there is an exclusion of small companies (less than 10 employees in the assembly area). Only companies located in the southeastern region of North America were included. This decision was made to narrow the differences in the backgrounds of the workers taking the survey.

Research Assumptions

A few assumptions are noticeable in this research. Five primary suppositions are a part of this study:

1. The employees will fill out the hand written survey in its entirety.
2. The surveys were answered honestly, in good faith and provide accurate data.
3. The survey developed for this research captured the main causal factors of high turnover.
4. Employees and companies who did not participate do not influence the results.

5. Although only southeastern companies were surveyed, the results can be applied to manufactures elsewhere.

Constraints

Since the HR departments administered the surveys on one particular day, there was no guarantee that all employees were available to take and submit the survey. Thus, only employees who were working on that particular day that the surveys were administered in the assembly department are included in this study. A major constraint was the amount of data that the companies were willing to share and is readily available in the literature.

Research Questions

The principal objective of this study is to address the issue of turnover in the assembly area of boat manufacturers. The objective is to identify those factors that cause concern for company's long-term success and lead to high turnover and recommend ways to mitigate those concerns before voluntary exit from employment occurs. The specific research questions include:

- What are the major factors that have an effect on employee concerns over company long-term success in the boat manufacturing industry?
- What is the correlation between these factors?
- Can these factors be influenced to reduce employee turnover?

Organization of Thesis

This research consists of five chapters. The first chapter is an introduction of the research. It includes background to explain the importance of this research to the economy in general and to boat manufacturers in particular. The second chapter is a literature review which provides detailed discussions of previous studies about employee retention in general, causes that lead to retention, effect of employee turnover on organization, and approaches to reducing employee turnover. Chapter Three, Methodology, describes the steps of the research process and discusses the tactics used to collect data. Chapter Four is Analysis and Results. It includes an analysis of the data and

an explanation of the results. Chapter Five, Discussion, presents the conclusions drawn from the results, makes recommendations, and summarizes the research conducted and presented.

Definition of Terms

To create a more accurate understanding of this research, the following definitions of key words and phrases are provided. The definitions are either formal definitions or author interpretations:

Employee Retention/Turnover: The number of workers hired to replace those who have left during a given period of time (Guralnik, 1968; Wimberly et al., 2000). This includes resignations, transfers, discharges, retirement, and death (Cooke, 1997). It includes the act of entering the organization in addition to the act of leaving (Bluedorn, 1982a).

Demographics: These are characteristics used for grouping statistics for all participants. Commonly used demographics include race, age, income, mobility (in terms of travel time to work or number of vehicles available), educational attainment, home ownership, employment status, and even location. Distributions of values within a demographic variable, and across households, are both of interest, as well as trends over time. A demographic trend is a factor that describes the changes in the general population. As listed above; race, age, income, etc., we can use these factors to describe the changes. (wikipedia)

Assembly Line: An assembly line is a manufacturing process in which interchangeable parts are added to a product in a sequential manner to create a finished product. The best known form of the assembly line, the moving assembly line, was created by Henry Ford. The idea of the assembly line was taken from the idea of "disassembly lines" by his engineers. Ford was the first businessman to build factories around that concept. It is widely considered to be the catalyst which initiated the modern consumer culture. (wikipedia)

Avoidable Separation: Separation that the management of an organization could have foreseen and prevented by providing inducements, such as raising wages or transfer to a more desirable shift, in an effort to entice employees to remain.

Flextime: A program that allows employees to determine their own work schedule within specific guidelines established by the employer.

Full-time Employee: A full-time employee is defined as a person who works an average of 32 or more hours in a workweek (Bureau of National Affairs, 1999).

Hourly Employee: An hourly employee is one who is compensated by an hourly wage for his or her labor.

HR: An abbreviation of Human Resources. This is the department in most companies that is responsible for hiring, training and releasing employees.

Involuntary Separation or Termination: A separation defined by the Bureau of Labor Statistics as a discharge for disciplinary reasons, layoffs of more than seven consecutive calendar days, permanent disability, retirement, or service in the Armed Forces for more than 30 consecutive days (BNA, 1999; Bureau of Labor Statistics, www.bls.gov).

NMMA: National Marine Manufacturers Association. This is the nation's largest recreational marine industry association, representing more than 1,600 boat builders, engine manufacturers, and marine accessory manufacturers. NMMA members collectively produce more than 80 percent of all recreational marine products made in the United States.

Paid time off: Employees are awarded a specific amount time determined by the number of hours worked rather than an amount predetermined by tenure, or number of years of service. Paid time off can be used as the employee wishes or needs. Some organizations allow individuals to accumulate their paid time off and to 'sell back' the time.

Retention Rate: Retention is the rate at which employees are successfully retained for employment by an organization over a specified period of time.

Separations: From The Bureau of National Affairs, separations are defined as *all* employment terminations. Voluntary, involuntary, avoidable, and unavoidable terminations are included within this definition. Other separations such as death, early retirement, and entrance into the U.S. Armed Forces for more than 30 consecutive days are also encompassed within this definition for the purpose of this paper. Internal transfers and leaves of absences (such as those covered by the Family and Medical Leave Act) *are not* included (Bureau of National Affairs, 1999).

Termination: Termination is generally defined as a permanent separation of the employee from the organization or employer (BNA, 1999).

Turnover Rate: The Bureau of Labor Statistics expresses the general or 'crude' turnover rate as the resulting quotient of dividing the number of separations during a time period by the average number of employees working within that same time period (Bureau of National Affairs, 199; Bureau of Labor Statistics, www.bls.gov). A whole number percentage is obtained by multiplying the quotient by 100.

Unavoidable Turnover: Terminations in which the employer has little or no control, exemplified by the employee's voluntary decision to terminate. This may include terminations due to retirement, military service, school, medical, or family concerns.

Voluntary Separation or Termination: Voluntary terminations are those in which the employee has determined to sever future employment with the employer. Motivation to terminate can be a desire to improve compensation, a return to work, enlistment into the Armed Forces for a period exceeding thirty days, or to seek employment with improved working conditions.

Chapter II

Literature Review

Introduction

Employee turnover occurs in every company, in every industry. Once companies have hired great employees, they want to keep them for a while. But, in today's highly competitive marketplace, that is a challenge and, sometimes, a threat. Today's employees are demanding more flexibility, more autonomy, and more recognition of individual differences. According to the 2000 Census (Bureau of Census), the average turnover rate in North America hovered at 20 percent. (Boyett, Snyder, 6). For boat manufacturers, that rate was publicly illustrated and had a high cost associated to it.

Much research has been conducted to identify the root causes in general, but little research has been found that addresses turnover in the boat manufacturing industry. This chapter discusses some of the literature available on turnover in manufacturing – the causes, the impact, approaches, and improvements. Unfortunately, little was available in the public domain that discussed this issue in the boating industry; so many extrapolations have been made from manufacturers in general to boat manufacturers in particular.

This chapter comprises three sections. The chapter begins with a discussion of factors that affect a company's long-term success and how employees view and react to these factors, and then provides a review of relevant research on employee turnover and factors that contributes to employee turnover. This is followed by a review on turnover in the boat manufacturing industry.

Company's Long Term Success

The vast majority of companies are trying at best to survive over the long term. Several factors affect this pattern; one of them is the unsuitability of current organizations to deal with innovation. Most companies have mastered the principles of good management, details on value chains, right degree of hierarchy, lean production processes, and coordinated flows of information. These characteristics were the building blocks of competitive advantage. However, such management techniques become

necessary but not sufficient. Recognizing management of the employee resource, however, is an absolute.

According to Llene Gochman, “Few things are more important to a company’s long term performance than choosing the right employees and ensuring they have the proper outlook from day one.” According to the magazine *HR Consulting* (2006), there are six key barriers to long-term success. These include the following:

1. Impatience

Quick action leads to quick results and often translates to individual rewards. They may also lead to questionable conclusions, seizure of shortcuts and half measures taken.

2. Simplicity

The desire to keep things simple is intuitive, but it does not always allow deep organizational diagnosis to find root causes of problems.

3. Fear

Finding the root causes often arouses defensive thinking and behavior in most organizations. Fear leads to rationalization: “we don’t have time for a lot of questions, just give us some answers.”(HR consulting, 2006)

4. Lack of Skill

Key managerial skills are rarely taught. People generally learn these skills on the job.

5. Vertical Perspective

Root causes are often complex, spanning multiple functional, hierarchical, and other organizational boundaries. Finding and analyzing them requires a systems perspective.

6. Hypercompetitive Pressures

In a hypercompetitive, “only the paranoid survive,” environment with an exponentially accelerating pace of innovation and competitive time appears to move faster.

When employees sense that management is not patient while they are learning a new skill or do not have realistic expectations, they often become fearful of their job security. They may develop a concern about the managerial skills of their immediate supervisors; question the perspectives of upper management; and feel crushed by the extreme pressures enforced by middle managers. These feelings or perceptions may lead to employee turnover.

Employee Turnover

Turnover refers to the percentage of employees who voluntarily exit an organization within a particular period time, usually not less than one year. Voluntary employee turnover has long been a central focus among researchers (Lee & Mitchell, 1994). Vandenberg and Nelson (1999) observed that most studies suggest that turnover is motivated by the dissatisfaction of: (1) the individual with some aspects of the work environment including the job, co-workers, or organization, or (2) the organization with some aspects of the individual, such as poor performance or attendance. Although some forms of turnover can help organizations get rid of poorly performing employees (Dalton, Todor, & Krackhardt, 1982) or to trade high-priced talent with low-price talent (Roseman, 1981), most practitioners and researchers use the term to refer to the loss of valued employees, and thus, as a negative index of organizational effectiveness (Staw, 1980; Vandenberg & Nelson, 1999). To stem such loss, many companies try to gauge employee satisfaction.

Locke (2007) gives a comprehensive definition of satisfaction and states it as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience”. Job satisfaction is a result of employees’ perception of how well their job provides those things that are viewed as important. There are three accepted dimensions to job satisfaction. First, job satisfaction is an emotional response to a job situation and it is inferred. Second, job satisfaction is often determined by how well the outcomes meet or exceed expectations. Last but not least, job satisfaction represents several related attitudes. There are a variety of factors that can influence a person’s level of job satisfaction. Some of the factors include the level of pay and benefits, the perceived

fairness of the promotion system within a company, the quality of the working conditions, leadership and social relationship, and the clarity of job description and requirements. Another, according to Branahan (2005) is employees' trust in management. These are all based on higher levels of needs, as described in Maslow's Hierarchy. .

Maslow's Hierarchy of Needs (Engineering Management Textbook-Thomas Pyzdec) proposed that people progress through five stages of needs (Fig. 1). Maslow postulated that the lower needs must be satisfied before one can be motivated at higher level. First category is physiological. At this level a person is seeking the simple physical necessities of life such as food, shelter, and clothing. A person whose basic needs are unmet will not be motivated with appeals to personal pride. To motivate personnel at this level, monetary rewards such as bonuses should be provided for good quality. Other strategies include opportunities for additional work, promotions, or small pay increase. Motivation tends to be based on the next level, which is safety. This is where issues such as job security become important.



Figure 1- Maslow's Hierarchy of Needs

The Ego level involves a need for self-respect and the respect of others. People are motivated by development of their own craftsmanship and the recognition of their achievements by others. The highest level is self-actualization in which people are self-motivated. To motivate this group, what is needed is to provide an opportunity for them to make contribution (Engineering Management Textbook-Thomas Pyzdec).

Some researchers report that performance increases as satisfaction increases, and thus turnover decreases. Herzberg's Two Factor Theory (1966) draws our attention to both the intrinsic job content factors (i.e., feelings of accomplishment, recognition, and autonomy) and to the extrinsic factors (i.e., pay, security, and physical working conditions). These job-related factors have direct impact on three kinds of satisfaction: organizational satisfaction, career/work satisfaction and satisfaction with salary and benefits (Volkwein & Parmley, 2000; Volkwein, Malik, & Napierski-Prancel, 1998). Dissatisfaction with these three aspects of the organization and the job are found to be related to intention to leave (Bretz, Boudreau, & Judge, 1994; Cotton & Tuttle, 1986; Smart, 1990).

According to Betsy Cummings (2004) "the use of reward and recognition programs in corporate America has jumped 6 percent in the past four years, and with good reason. Experts insist that companies with strong incentive programs experience lower turnover, more dedicated workers, and improved productivity." Recognition rewards can take many different forms, can be given in small or large amounts, and in many instances are controllable by the manager. Also, the employee may find increased responsibility as motivational recognition and the result is greater productivity and increased retention.

Research reveals that the quality of the supervision an employee receives is critical to employee retention (Susan Heathfield, 2007). It is not enough to say that the manager is well liked or nice. However, a manager or supervisor who is in favor of retention recognizes that quality of the supervision is the key factor in employee retention. Managers, who retain employees by communicating expectations and sharing with them a clear picture of what constitutes success, deliver to employees what the expected deliverables and the performance of their job. (Outside the lines, 2007) It has been found

that employees feel valued, empowered, and confident with these managers. However, employees complain and leave the managers when they fail to provide clarity about expectations, provide clarity about career development, give regular feedback about performance, hold scheduled meetings, and provide a framework within which the employee perceives he can succeed. (Outside the lines, 2007)

Additionally, employees are concerned about whether the values of the company for which they work are compatible with their own personal view; they are concerned about the work environment (FM World Magazine, 2006); and they are affected when other employees leave. When people leave a firm, other employees may become fearful and uncertain about their status within the company. Such apprehension and insecurity can spread like a virus, and soon turnover may be uncontrollable. High turnover also can give a firm an unhealthy “reputation in the marketplace, making recruiting future candidates especially difficult.” (Shawn Abraham, 2007) It can also change the culture within a company.

Culture is a powerful element that shapes work enjoyment, work relationships, and work processes. It is made up of values, beliefs, underlying assumptions, attitudes, and behaviors shared by a group of people. According to Shawn Abraham, “a strong company culture is one that places value on people, fosters teamwork, is forward thinking, and encourages open communication.” (Shawn Abraham, 2007) Companies with an adaptive culture that is aligned to their business goals outperform their competitors.

It takes well-trained employees to maintain that competitive advantage. According to Elizabeth Horscroft (2007), “Increasingly, employers have discovered that training programs can be powerful force for keeping employee happy.” Efficacy training and development can have a considerable impact on employee performance management. Also, according to Kenneth Baylor (2007), “every time an employee leaves, so does a portion of the organization’s investment in training”. The lack of proper training results in haphazard work, delays and malfunctions, failure to meet performance and quality standards, and excessive wear of equipment. More subtle signs are lack of interest in work, untidy work, lack of sense of responsibility, absenteeism, and poor communication.

Successful companies address training on multiple levels. Leading experts like, (Organizational Behavior, Fred Luthans, 2005) recommend training as an ongoing, multi-pronged effort. Bandura categorizes his approach to training and development into three areas: guided mastery for skills; mastery for problem-solving and decision-making; and the development of self-regulatory competencies. This approach equips the employee with what is needed to foster empowerment on the job.

What is also needed, however is clear communications, with channels open in all directions. According to Kenneth Baylor (2007), “a recent study found that companies with rich compensation packages but poor communication have a higher turnover rate than those with lesser packages and effective benefits communication.” According to Monte Enbysk (2007), a study involving 20,000 exit interviews found that the number one reason people leave jobs is poor supervisory behavior and interactions. The key to a good communication includes four elements: communicate needs, share skills and knowledge, create a motivation cycle, and establish empowerment expectations (Keefe, 2007). The key is to create an environment in which employees are engaged.

An engaged employee is a person who is fully involved in, and enthusiastic about, his or her work. Engaged employees are attracted, inspired, committed, and fascinated by their work. People that are actively engaged help move the organization forward. Also, engaged employees care about the future of the company and are willing to invest the discretionary efforts (Seijts, 2006). Engaged employees feel a strong emotional bond to the organization that employs them (Robinson, 2006). Employees who are engaged work with passion and feel a profound connection to their company and feel a strong emotional bond to the organization that employs them. This is demonstrated by employees who are willing to recommend the organization to others and commit time and effort to help the organization succeed. Employees who are engaged have a strong relationship with their manager, have clear communication with their supervisor, clear path set for focusing on what they do best, strong relationship with their coworkers, and feel strong commitment with their coworkers enabling them to take risks and stretch for excellence (Leadership Advantage, 2001).

Thus, the challenge for most employers is to find the right people and keep them. Understanding the reasons for high employee turnover is essential for planning to reduce the employee turnover rate. "While most organizations want to blame turnover on wages and benefits, they actually do not play a big role in why people leave their jobs. The overwhelming majority of people who leave any company leave because of the way they are treated every day. Surveys consistently show that more than 40 percent of people who quit do so because they feel they weren't appreciated for their contributions" (Daniels, 145). Other reasons for turnover are understaffing, lack of communication, and poor job fit (Stack, 28). Preventing high employee turnover is accomplished by understanding the reasons for turnover. That is an intended contribution of this research.

Turnover for Boat Manufacturers

The boating industry and its issues are absent in the academic literature. Furthermore, very little research is available to the general public of any issues concerning the boat manufacturing industry. According to an assembly manager of one of the participating companies, most of the companies in this industry are entrepreneurial start-ups that are privately held (i.e. no publicly traded stock or requirement to report financial results to a large number of shareholders).

The research revealed no theses, dissertations, or journal articles that pertain to the boat manufacturing industry except one document, (Knoxville News Sentinel, 2007). The NMMA website was searched for statistics and articles. However, there was a cost of at least \$685 to get a recent report. Because of the high cost of this information, it was not possible to get the statistics and enough background information on employee turnover in the boating industry. One article, published in the October 19, 2004 NMMA newsletter described a new course offered by the association to help reduce employee turnover in fiberglass lamination, the highest area of turnover in the industry.

Other company web sites described what they have done to address employee turnover. In its January 2005 newsletter, Regal Marine, an Orlando, Florida-based company that is owned by the Kuck family, shared its faith-based approach. The company extends its Christian fellowship to all employees through a service called

Marketplace Ministries, Inc. which provides on-site chaplains who talk with employees about everyday problems and religious issues. The chaplains are not employees, but they are available to assist employees with everything from prayer services to general counseling. Regal pays for the service. Management reports that employee turnover has declined by 50 percent since Regal brought the service into the plant in 2000.

(http://www.regalboats.com/regal_news)

According to Michael Silence (Knoxville News Sentinel, 2007), “the boating industry in east Tennessee is quite nice, with one area manufacturer expecting a fifth straight year of double-digit profits. Area boat manufacturing and sales are bucking an apparent national trend that as seen industry leader Brunswick Corp. planning for a downturn this year and Brunswick rival Gunman agreeing that the overall boating business isn’t rosy right now.”(Michael Silence, 2007) Also, according to Jesse Wells, spring sales this year compared to last are not very encouraging, and the overall 15 foot plus power market seems to be more or less headed toward a 10 percent decline.” (Jesse Wells, 2007)

Chapter III Methodology

Introduction

As previously stated, the objective guiding this research is to identify those factors that cause concern for company's long-term success and lead to high turnover and recommend ways to mitigate those concerns before voluntary exit from employment occurs. The specific research questions include:

- What are the major factors that have an effect on employee concerns over company long-term success in the boat manufacturing industry?
- What is the correlation between these factors?
- Can these factors be influenced to reduce employee turnover?

In order to gather and analyze data to determine whether a relationship exists between employees' concern for company's long-term success and employee turnover, a survey was developed taking into account the outline for the rest of this chapter.

Hypothesis:

The literature supports the fact that several factors affect employee turnover, and that concern for long-term success is correlated with employee turnover in business organizations of all types in the US (Stanley 2002 and Branham 2005). Additionally, research shows that job satisfaction is a central factor in explaining employee turnover (e.g., Crampton & Wagner, 1994) and intention-to-quit (Blau, 1993). Thus, there is an established relationship between job satisfaction and intent to exit and between the decision to leave and the perception of a company's long-term success.

Although the survey used in this study did not address "intent", the connection between intent and turnover has been established in the literature. In theory a person's behavioral intentions should be a good predictor of future behavior according to multiple research studies presented by Mobley (1982). Mobley concluded that when all variables were combined, "only intention to quit was significantly related to turnover". It was further determined by the studies, that intentions to quit is the variable that immediately

precedes turnover. The assertion by Mobley was, “intentions are the best predictors of turnover”. Therefore, it is hypothesized that:

H1: There are no significant influences on an employee’s perception of a company’s long-term success.

This hypo thesis was tested by the survey question number 9, for the purpose of determining if any factors were positively correlated with employee turnover. Stated another way, what is of importance to this study is the relationship between the individual variables and the perception of the company’s viability.

Research Design

This research was based on the collection of data from literature and an employee survey. The data was analyzed and used to make recommendations from the results and conclusions drawn. Specific steps taking are as follows:

1. From the literature, compile a comprehensive list of factors that contribute to turnover.
2. Based upon the literature results, build a research instrument that measures dissatisfaction and ultimately lead to turnover.
3. Have the companies administer the research instrument to a group of employees in the assembly area to assess their degree of satisfaction.
4. Through the data collected, refine a model by correlating the perception of company’s success variable with other variables in the survey.
7. Create and validate a regression model to predict expected turnover, based on the direct correlation of satisfaction to turnover to expected long-term success of the company.
8. Make recommendations for the development of change management programs to address the factors identified as affecting employees’ perceptions of long-term company success, leading to employee turnover.

The Proposed Causal Model

Key to this research is the causal model used. This model for a company’s long term success (Figure 2) is a modification of the intent to stay model by Daly & Dee 2006. It is composed of three types of variables: control variables, independent variables, and dependent variable. An independent variable influences the outcome measure; it is an

hypothesized cause or influence on a dependent variable. Many of the independent variables in this model are specific to work process and management relationships. The dependent variable is being determined from the influences of the independent variables. The one used in this model is company's long term success. This variable will predict turnover. The control variables are those held constant or whose impact is removed in order to analyze the relationship between other variables without interference, or within subgroups of the control variable. The ones used in this model are area, gender, age and the number of years worked in that company. The specific variables and their relationships are shown in Figure 2.

Assumptions

1. Respondents to the survey provided accurate and honest information.
2. The survey developed for the study adequately captures the connection between employee satisfaction and turnover.

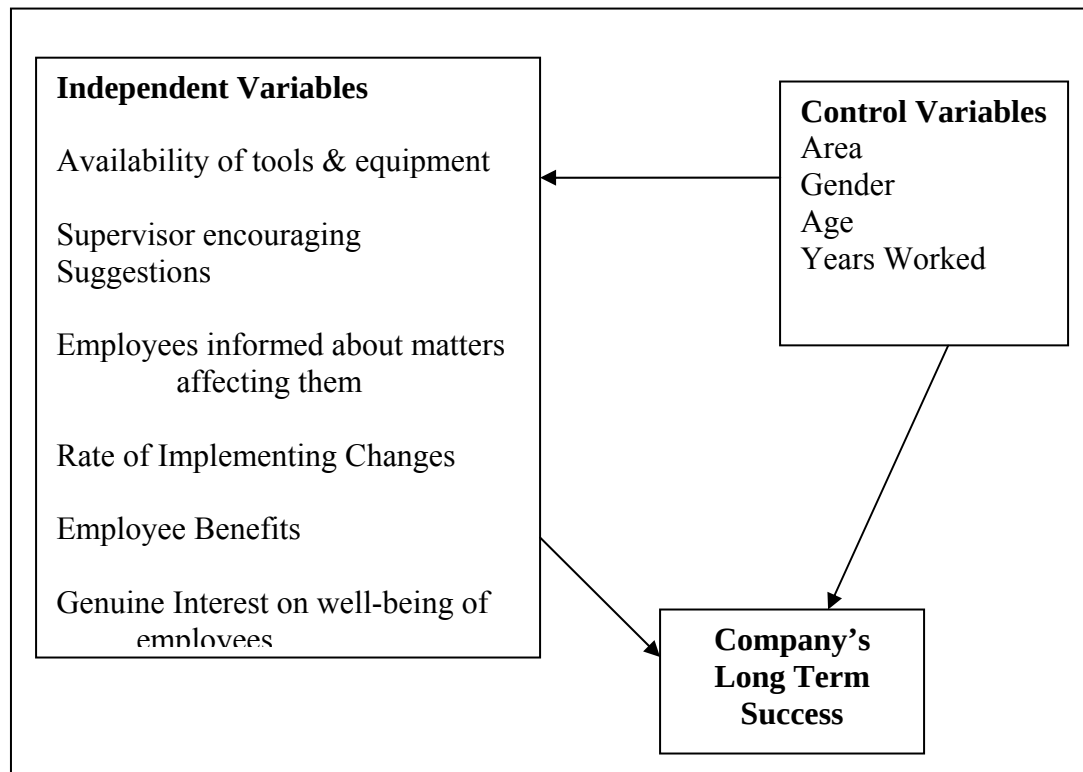


Figure 2: Conceptual Model for Company's Long Term Success

3. The variables selected for correlation reflect important aspects of employee perceptions that influence turnover.
4. Regardless of the time/shift to which the survey was administered, all employees within a company have received the same training for their respective positions..
5. Work in the assembly area is basically the same for all companies surveyed.
6. Only assembly workers received and completed the survey instruments.
7. The entire survey was completed.

Constraints and Limitations

The research design imposed delimitations that defined the parameters of the current study. The constraints and limitations enforced throughout this study were:

1. Not all the companies contacted were willing to participate, even after initially agreeing and asking for the survey.
2. Not all the employees were agreeable to complete the survey, so the results do not represent all who were present during the shift it was administered..
3. All surveys were subject to interpretation of the respondents.
4. Only companies whose managers would allow the interruption for the survey and would be willing to provide the necessary data were studied.
5. Companies had to have at least 15 employees in assembly. A larger number of employees is necessary in case employees do not show up for work on the day the survey is given, or, because the study is voluntary, many employees choose not to participate which may leave a large gap in the feedback.
6. Employees had to attend work on the day the survey was administered in order to participate.

Population and sample

The population for this study consisted of assembly workers in boat manufacturing companies. The project methodology and participants used were approved by the Office of Research Internal Review Board (IRB). The companies were chosen based on the type of boats manufactured, the size of the company, and the number of

assembly workers in each company. Each company had at least 16 assembly employees. Of the five companies examined, there were 162 employees and only 39 (24%) completed and returned the survey.

Instrument Used

The data retrieved for this study was obtained from a survey administered to determine employee satisfaction. The survey packets were mailed to 502 assembly workers on April 20, 2007. My advisor Dr. Denise Jackson reviewed the content of the packet, and the IRB approved the survey structure. Each packet included a permission letter to survey the employees and described the nature and the purpose of this study and to encourage companies to participate in it. Furthermore, a consent form was also sent to provide more detail on the procedures, risks, benefits, injury statement, time duration for completing the survey, confidentiality statement, right to ask questions about the study, compensation, and participation. Moreover, the survey contained two main sections, the first one was about demographics and the second part consisted of different questions about employee satisfaction in their work area. In this section, responses were based on a Likert scale of 1 to 5, with 1 being the least favorable answer and 5 being the most favorable. This survey may be found in Appendix C. In addition, each participating company received the survey instrument, a postage-paid envelope, and all documents mentioned previously. The initial response rate was low, so each company received a follow-up phone call as a reminder.

Coding Procedure

Because of the confidentiality required by the participating companies, a coding procedure was used. After the data was received from participants, the surveys were given an ID number to keep control of the data in case of mistakes. Data was entered into an excel spreadsheet to records the answers for each question. The researcher was the only one who had access to the data after receiving the completed surveys. Thus, only the investigator knew each company's name; and she randomly chose numbers to represent each. Moreover, the data was stored in a locked cabinet in an office located at the

University of Tennessee. The data was summarized in the investigator's computer, and only she had access to it. Finally at the end of this study, the surveys were either shredded or returned to the participants.

Data Analysis

The data collected using the employee satisfaction survey instrument completed by employees working in the assembly area during the period of April 20, 2007, through June 20, 2007 was entered into a data file and analyzed using the statistical Package of the Social Sciences (SPSS) at the University of Tennessee, Knoxville. Using this software, the investigator calculated the percent distribution, frequency, means and medians of the responses. A correlation among the variables was conducted, and the results were used to develop a regression model for predicting the extent to which the value of the dependent variable can be determined from a linear relationship among the contributing independent variables.

This study focused on the correlations between the employee's perception of long-term success and the other independent variables previously described. The attributes were analyzed using the Pearson Product Moment Correlation. Pearson's correlation reflects the extent to which values of two variables are linearly related to each other. Given two variables and n pairs of data, $(y_1, x_1), (y_2, x_2), \dots, (y_n, x_n)$, Pearson's correlation, Equation 1, is used to determine the strength of correlation.

Equation 1.
$$r = \frac{S_{xy}}{\sqrt{\left(\sum_{i=1}^n (x_i - \bar{x})^2\right) \left(\sum_{i=1}^n (y_i - \bar{y})^2\right)}} = \frac{S_{xy}}{\sqrt{S_{xx} S_{yy}}}$$

Where r represents the correlation coefficient and S represents the sum of the cross products of the two variables x and y . The resulting value ranges from 0 (random relationship) to 1 (perfect positive or negative linear relationship). It is usually reported in terms of its square (r^2), which is interpreted as the percent of variance.

The investigator recognizes that there are some concerns in using correlation to investigate relationships among variables. Since the correlation is symmetrical, it does

not provide evidence of which way causation flows. If other variables also influence the dependent variable, then any covariance they share with the given independent variable in a correlation may be falsely attributed to that independent variable. Also, to the extent that there is a nonlinear relationship between two variables being correlated, correlation will understate the relationship. Correlation will also be attenuated to the extent there is measurement error, including use of sub-interval data or artificial truncation of the range of the data. The results of this correlation analysis were used to develop a regression model.

The regression model is an equation that represents the relationships between the dependent and independent variables. This equation will predict the expected change in Y given a change in x . In studies, such as this, where there are several independent variables, there is a possibility that the variables may be intercorrelated and their interactions may affect the dependent variable. Therefore, multiple regression analysis was used to analyze separate effects of two or more independent variables on a dependent variable. Using this procedure, an equation is produced based on one dependent variable and n independent variables as shown in Equation 2.

$$\textbf{Equation 2. } Y = \beta_o + \beta_1x_1 + \beta_2x_2 + \dots + \beta_nx_n + \epsilon$$

In this equation, Y represents the dependent variable, the response variable, and it is related to the n independent variables, the regression coefficients. Accepting this model requires the variables to meet certain criteria. These include normality, linearity, independence, and constant variance. It is assumed in regression analysis that the data is normally distributed because non-normally distributed variables can distort relationships and significance tests. A goodness of fit test is performed to check that the data is normal.

Summary

One overlying research question guided this study, are there possible correlations between employees' perceptions concerning the company's long-term success and other significant variables that influence turnover. The data was collected by using an employee satisfaction survey. As described in the methodology, the results provided input to determine interactions among several factors that influence employee turnover. That input was used to identify the significant variables, and those variables were used to define a regression model for predicting the value of the dependent variable. SAS was then used for statistical analysis of all of the attributes. The statistical analysis included correlation analysis and multiple regression analysis. The next chapter will display and discuss the results.

Chapter IV

Results

Introduction

The purpose of this research was to investigate the relationship between the employee's perception of their companies' long-term success and other factors that influence turnover. This chapter presents the results and discusses the findings regarding the completed surveys of assembly workers of sampled boat manufacturing companies. This chapter provides an overview of the responses and an analysis of the independent variables. It provides a report of the demographics of the participants, the results of the statistical analyses – the correlations among variables and the regression modeling.

Population and Questionnaire Response Rate

As discussed in chapter 3, the participants in this study were from different boat manufacturing companies located in different states. Employees who were working the day of surveying and who chose to participate completed the employee satisfaction survey during their regular shift hours. Company 1 had a total of 10 employees and 8 of them completed the survey which means 80% participation, company 2 had 20 employees and 5 only completed the survey that is 25% participation, company 3 had a total of 20 employees in the assembly area and only 4 who completed the survey which means 20% participation, and company 4 had 94 employees and only 15 participated and that means 15.95% participation. Thus, of the 144 employees who could have participated, only 32 completed the survey, 18%.

Demographic Profile of Respondents

Several questions were included to address demographics of the respondents. These included gender, work area, age, and years of service. Of the 32 participants in this survey, 5 were females (15.62% of respondents) and 27 were males (84.38% of respondents). Therefore, there were significantly more males than females who presented only 15 percent of the population. No follow-ups were done to discover whether females shy away from jobs in the assembly area or jobs in any area in boat

manufacturing companies. The percentage of male and females participants in each company is provided in Table 1.

As previously described, the assembly area is further divided into rigging and final finish. Of the 32 participants in this survey, 59% worked in rigging and 41 % worked in final finish. Therefore, there were significantly more rigging participants than final finish participants. These results are shown in Table 2.

Regarding age, the data showed that no participant was less than 20 years old, 31.26 percent were between the ages of 20 to 30 years old, 34.37 percent were between the ages of 30 to 40 years old, 34.37 percent were between the ages of 40 and 50 years old, and no participants were over the age of 50 years old. Table 3 summarizes these results.

Table 1: Gender of Respondents

Company	Males counts	Females counts
1	7	1
2	5	0
3	4	0
4	11	4

Table 2: Area Categories

Company	Rigging counts	Final Finish counts
1	3	5
2	5	0
3	3	1
4	8	7

Table 3: Age Categories

	less 20	20-30	30-40	40-50	over 50
Company 1	0	4	1	3	0
Company 2	0	1	2	2	0
Company 3	0	2	2	0	0
Company 4	0	3	6	6	0

Table 4: Respondents' Years of Work Experience

	Categories	Years		Frequency (%)
		Worked	Counts	
1	New Hire		7	21.87
2	Trainee		9	28.12
3	Novice		7	21.87
4	Independent		5	15.62
5	Experienced		3	9.37
6	Fully Productive		1	3.15
7	Pre-Retirement		0	0

Also of interest were the years of work experience. The investigator developed categories based on the number of years indicated. This study shows that 21.87% of the respondents were from the first category which is new hires, a majority of respondents 28.12% were trainees, 21.87% were from the novice category, 15.62% presented the independent category, 9.37% of the participants were experienced and only 3.15% were fully productive. The counts and percentage are provided in Table 4.

Descriptive Analysis-of All Variables

A descriptive statistical analysis for all questions in the survey was performed using SPSS software. These questions were based on a Lickert scale of 1 to 5, with 1 being strongly disagree and 5 strongly agree. These results are shown in Table 5.

The respondents' answers were higher than neutral levels on the following variables: the reasonable amount of work, clear understanding of job responsibilities, believed the information that they got from management, proper amount of emphasis is placed on quality, encouragement to take action quickly to resolve problems, insurance of employee safety, having the information needed to do their job, strong focus on customers, company's long term success, valuing social events, meeting of work units, strong commitment on quality, satisfaction with the pay, and control of waste in their work area with a means values of 3.87, 3.88, 3.69, 3.81, 3.69, 3.63, 3.61, 3.53, 3.59, 3.66, 3.53, 3.50, 3.58, 3.5 respectively.

Table 5: Descriptive Statistics on Q1-Q40

	Mean	Std. Deviation	N
Reasonable amount of work	3.87	.991	31
emphasis on quality	3.81	.965	32
action to resolve problems	3.69	1.148	32
encouraging suggestions to resolve problems	3.32	1.249	31
believe the information I get from management	3.69	1.120	32
involvement on decision	3.31	1.306	32
strong focus on customers	3.53	1.135	32
enough information about external customers	3.31	1.330	32
company's long term success	3.59	.911	32
value of social events	3.66	.787	32
meeting of work units	3.53	.842	32
happy with the training	2.94	1.045	32
strong commitment on quality	3.50	1.047	32
satisfaction with the pay	3.58	.807	31
satisfaction with amount of responsibility given	3.44	1.014	32
provide focus on career development	3.06	1.076	32
encouragement to use own judgment on jobs	3.47	1.077	32
understanding of job responsibilities	3.88	.833	32
genuine interest on well-being of employees	3.28	1.023	32
employees informed about matters affecting them	3.25	1.164	32
provide recognition for job well done	2.90	1.193	31
supervisor dealing fairly with everyone	3.39	1.086	31
supervisor solve job related problems	3.19	1.138	31
supervisor encourages teamwork	3.03	1.177	32
supervisor give adequate feedback on performance	3.44	1.014	32
supervisor encourages suggestions	2.75	1.270	32
performance on job is evaluated fairly	3.44	.840	32
progress reports are conducted regularly	3.10	1.029	30
supervisor motivates employees	3.25	1.016	32
management keeps employees informed	3.44	1.014	32
I have the information I need to my job	3.61	.955	31
ensure of employee safety	3.63	.833	32
control of waste in my area	3.47	.761	32
understanding of steps to reach plant's goals	1.00	.000	27
availability of support personnel	3.26	1.125	31
Availability of tools and equipment	3.39	1.145	31

The participants reported neutral values on these variables: the company has done a good job of providing opportunities for career development, performance progress reports are conducted on regular and timely basis, and supervisor encourages teamwork, satisfaction with amount of responsibility, encouragement to use own judgment, supervisor give adequate feedback on performance, performance on job is evaluated fairly, management keeps employees informed, encouraging suggestions to resolve problems, involvement on decision, information about external customers, focus on career development, interest on the well being of employees, employees informed about matters affecting them, supervisor dealing fairly with everyone, supervisor solves job related problems, supervisor motivates employees, availability of support personnel, and availability of tools and equipment with means values of 3.06, 3.10, 3.03, 3.44, 3.47, 3.44, 3.44, 3.44, 3.32, 3.31, 3.31, 3.28, 3.25, 3.39, 3.19, 3.25, 3.26, 3.29 respectively.

Additionally, significance tests were performed using the Student's t-test, with an alpha of 0.05. Results are shown in Table 6. From this output, the following variables were found not significant: encouraging suggestion to resolve problems, involvement on decisions, information about external customers, happiness about the training, focus on career development, interest on the well-being of employees, employees informed about matters affecting them, providing recognition for job well done, supervisor dealing fairly with everyone, supervisor solve job related problems, supervisor encourages teamwork, supervisor encourages suggestions, progress reports are conducted regularly, supervisor motivates employees, availability of personnel, and availability of tools & equipment.

The variables found to be significant include: reasonable amount of work, emphasis on quality, action to resolve problems, believing the information gotten from management, strong focus on customers, company's long term success, value of social events, meeting of work units, strong commitment on quality, satisfaction with the pay, satisfaction with the amount of responsibility, encouragement to use own judgment, understanding of job responsibilities, supervisor gives adequate feedback on performance, and performance on job is evaluated fairly.

The respondents reported non-favorable values on these non significant variables such as providing recognition on a job well done, happiness about the training provided

Table 6: t-Test Results

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	Lower	Upper	Lower	Upper	Lower	Upper
Reasonable amount of work	4.892	30	.000	.871	.51	1.23
emphasis on quality	4.762	31	.000	.813	.46	1.16
action to resolve problems	3.387	31	.002	.688	.27	1.10
encouraging suggestions to resolve problems	1.438	30	.161	.323	-.14	.78
believe the information I get from management	3.473	31	.002	.688	.28	1.09
involvement on decision	1.354	31	.186	.313	-.16	.78
strong focus on customers	2.647	31	.013	.531	.12	.94
enough information about external customers	1.329	31	.194	.313	-.17	.79
employee's judgment about company's success	3.688	31	.001	.594	.27	.92
value of social events	4.715	31	.000	.656	.37	.94
meeting of work units	3.570	31	.001	.531	.23	.83
happy with the training	-.338	31	.737	-.063	-.44	.31
strong commitment on quality	2.701	31	.011	.500	.12	.88
satisfaction with the pay	4.005	30	.000	.581	.28	.88
satisfaction with amount of responsibility given	2.441	31	.021	.438	.07	.80
provide focus on career development	.329	31	.745	.063	-.33	.45
encouragement to use own judgment on jobs	2.462	31	.020	.469	.08	.86
genuine interest on well-being of employees	1.555	31	.130	.281	-.09	.65
employees informed about matters affecting them	1.215	31	.234	.250	-.17	.67
provide recognition for job well done	-.452	30	.655	-.097	-.53	.34
supervisor dealing fairly with everyone	1.985	30	.056	.387	-.01	.79
supervisor solve job related problems	.947	30	.351	.194	-.22	.61
Understanding of job responsibilities	5.944	31	.000	.875	.57	1.18

Table 6: continued

supervisor encourages teamwork	.150	31	.882	.031	-.39	.46
supervisor give adequate feedback on performance	2.441	31	.021	.438	.07	.80
supervisor encourages suggestions	-1.114	31	.274	-.250	-.71	.21
performance on job is evaluated fairly	2.946	31	.006	.438	.13	.74
progress reports are conducted regularly	.532	29	.599	.100	-.28	.48
supervisor motivates employees	1.392	31	.174	.250	-.12	.62
management keeps employees informed	2.441	31	.021	.438	.07	.80
I have the information I need to my job	3.574	30	.001	.613	.26	.96
ensure of employee safety	4.245	31	.000	.625	.32	.93
control of waste in my area	3.483	31	.002	.469	.19	.74
availability of support personnel	1.278	30	.211	.258	-.15	.67
availability of tools and equipment	1.882	30	.070	.387	-.03	.81

by their companies, supervisor encourages suggestions from employees with means of 2.90, 2.94, and 2.75 respectively.

The next step was to select variables that are highly correlated, SPSS software was used to perform the Pearson correlation on all questions utilized in the survey. After the correlation analysis was performed, the data was exported to excel. Since Pearson correlation is symmetrical, a lower level was used. Then, a value for product-moment correlation (r) was set to be no less than 0.6. After the data was recapitulated, sums of blank cells were added at the end of each column and row. As well, a total of correlations were added at the end of each column to identify the column that has the highest sum of correlations. The lowest column value of total blanks was detected and since it had the highest sum of correlations values, the column was highlighted to be the dependent variable in this model. The dependent variable in this model was company's long term success.

The independent values were chosen based on the high correlation between company's long term success and those variables. The independent variables were genuine interest on well-being of employees, employees informed about matters affecting them, supervisor encourages suggestions, availability of tools and equipment, and last but not least the improvement on implementing changes. As well, from the spreadsheet high correlation values were detected and those were selected to be greater than 0.75. These intervening variables that are used in this model were action to resolve problems, strong focus on customers, provide of recognition for job well done, and performance on job is evaluated fairly. The highest correlation in the model is between company's long term success and supervisor encourages suggestions with a value of 0.802 (See Figure 3).

Correlation Matrix

The correlation matrix (Table 7) showed that each structural had a statistically significant relationship in the predicted direction with the company's long term success. Genuine interest on well-being of employees, employees informed about matters affecting them, supervisor encouragement for suggestions, availability of tools and

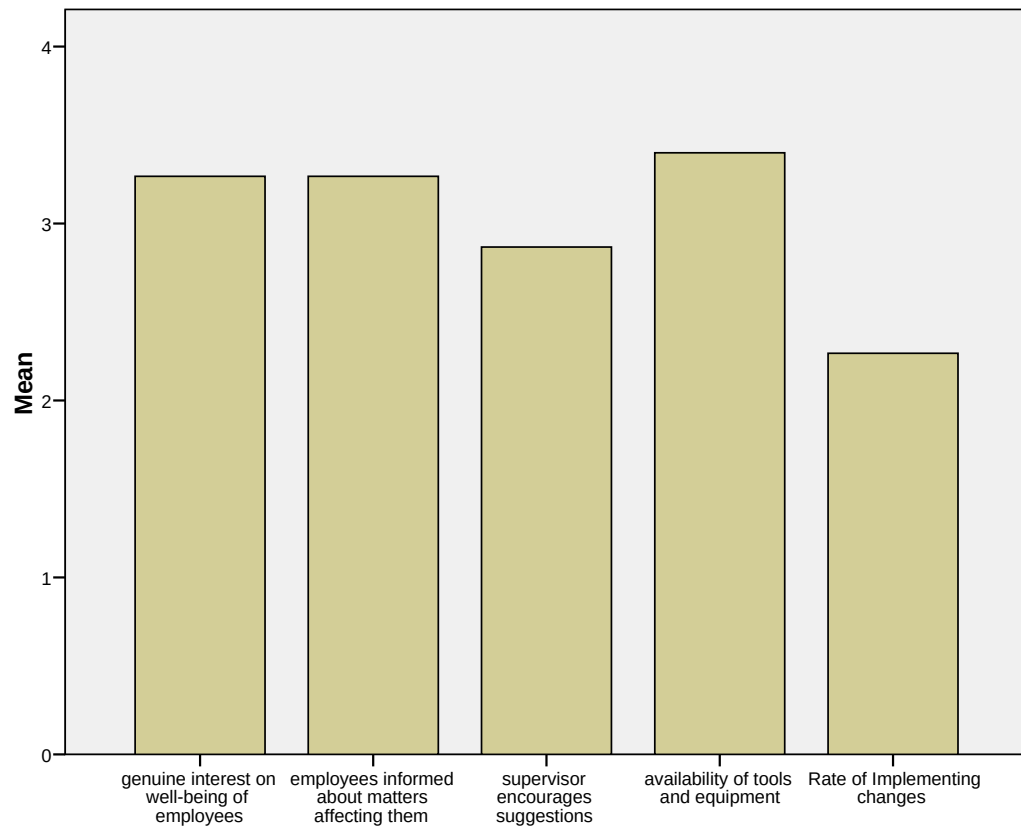


Figure 3- Correlation

Table 7: Correlation Matrix

	employee's judgment about company's success	genuine interest on well-being of employees	employees informed about matters affecting them	supervisor encourages suggestions	availability of tools and equipment	Rate of Implementing changes
employee's judgment about company's success	1					
genuine interest on employees	.680(**)	1				
employees informed about matters	.738(**)	.860(**)	1			
supervisor encourages suggestions	.802(**)	.701(**)	.655(**)	1		
availability of tools	.606(**)	.364(*)	.342(*)	.613(**)	1	
Rate of Implementing changes	.734(**)	.375(*)	.501(**)	.609(**)	.549(**)	1

a) Predictors: (Constant), supervisor encourages suggestions

b) Predictors: (Constant), supervisor encourages suggestions, employees informed about matters affecting them

c) Supervisor encourages suggestions, employees informed about matters affecting them, 'Rate of implementing changes

equipment, and improvement of implementing changes demonstrated significant positive correlation with company's intent to success.

Table 7 displays the statistically significant correlations that were calculated in this research. The table lists five positive significant correlations, which can predict employee's judgment about company's long term success in the boat industry located in the south-east coast. The factors that can be utilized to predict, or that contribute to, company's long term success in the boat industry include genuine interest on the well being of employees, employees being informed about matters affecting, supervisor encourages suggestions, availability of tools & equipment, improvement on implementing changes. These five variables have a positive relationship to employee's judgment about company's long term success, which indicates that if one of these five variables were to be increased, we would expect an increase in employee's judgment on company's long term success. The researcher does not mean to imply that these five variables may cause company's failure. In short, as any or all of these five variables are increased, we would expect employees to feel better about a company's long term success and, thus, to stay instead of exit employment.

Other results revealed that no demographic variable had a statistically significant effect on company's long term success. Also, some dominant variables like action to resolve problems, strong focus on customers, and providing recognition for job well done, supervisor dealing fairly with everyone, and performance on job evaluation is fairly done had high positive correlation with other variables. The highest correlation value between all variables is between genuine interest on well-being of employees and employees being informed about matters affecting them with a value of 0.86. Followed by a value of 0.802 between supervisor encourages employees suggestions and company's long term success.

The Regression Model

A stepwise regression was run on the structural variables to predict the unstandardized coefficients on the employees' judgment on company's success.

Two of the variables were dropped, genuine interest on the well-being of employees and availability of tools & equipment. Three variables were left which are x_1 to be supervisor encourages suggestions, x_2 to be employees informed about matters that affect them, and x_3 to be the improvement on implementing changes. The results of the step-wise analysis performed in SPSS are shown in Table 8.

The resulting model for predicting employees' perception on company's long term success can be written as:

$$y = 1.42 + .246 x_1 + .271 x_2 + .289 x_3 + e$$

Where β_0 is equal to a value of 1.42, β_1 is equal to a value of .246, β_2 is equal to a value of .271, β_3 is equal to a value of .289. The error value e in this model is normally distributed with a mean of zero. This model was validated by comparing the model results with the average results from each responding company. The validation summary is shown in Table 9.

Table 8: Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	2.040	.262		7.774	.000
	supervisor encourages suggestions	.567	.084	.786	6.724	.000
2	(Constant)	1.608	.268		6.007	.000
	supervisor encourages suggestions	.354	.101	.490	3.512	.002
	employees informed about matters affecting them	.320	.103	.435	3.116	.004
3	(Constant)	1.420	.245		5.801	.000
	supervisor encourages suggestions	.246	.096	.341	2.560	.017
	employees informed about matters affecting them	.271	.092	.368	2.943	.007
	Rate of Implementing changes	.289	.098	.332	2.942	.007

a) Dependent Variable: company's long term success

Table 9: Validity of the Regression Model

Company	Model Result	Data Result	Difference (€)
<u>Company 1</u>	$y = 1.42 + .246 (2.75) + .271(3.125) + .289(1.125) + e$ $= 3.2685 + e$	3.375	0.1065
<u>Company 2</u>	$y = 1.42 + .246 (4.6) + .271(4.4) + .289 (2.4) + e = 4.4376 + e$	4.60	0.1624
<u>Company 3</u>	$y = 1.42 + .246 (2.5) + .271(3) + .289 (1.75) + e = 3.3537 + e$	3.750	0.0396
<u>Company 4</u>	$y = 1.42 + .246 (3.2) + .271(3) + .289 (0.666) + e = 3.213 + e$	3.333	0.1207

Additional tests were also done to determine validity of this model. A plot of the residuals is found in Figure 4, and no patterns are shown to indicate that the residuals are dependent across the predicted values. Also, as shown in Table 10, the Kolmogorov and Shapiro goodness-of-fit tests were performed and no values were greater than 0.5, indicating that the normality assumption has not been violated. The results of the Analysis of Variance (ANOVA) in Table 11 confirm that the observed differences among the sample means are statistically significant. The regression model between the company's success and the different structural variables shows that the model is significant ($p\text{-value} < 0.01$) with an F-value is equal to 32.403 (table 13 & figure 10'). In fact, the ANOVA proved that the model is statistically significant.

Scatterplot

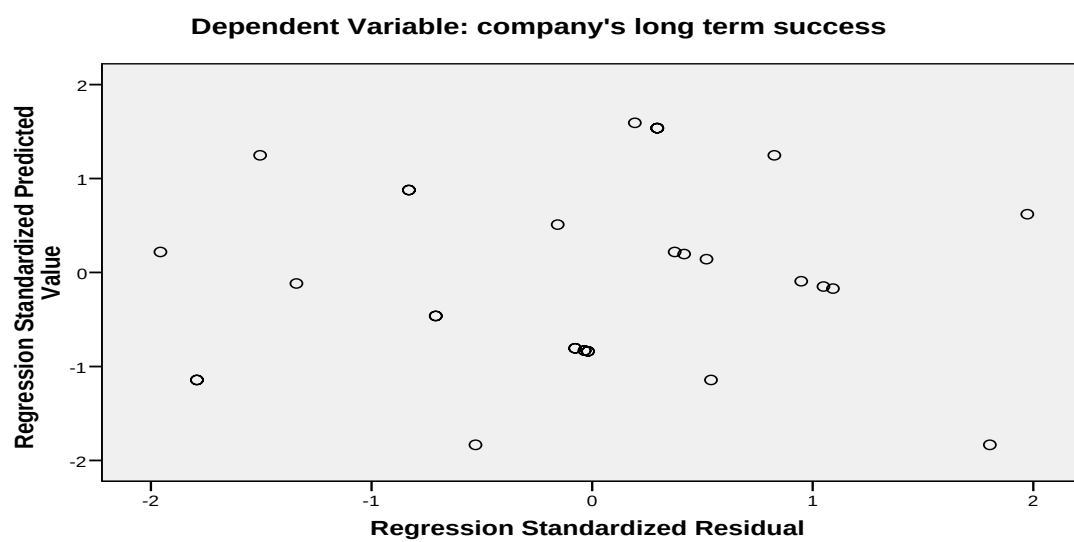


Figure 4- Scatter plot of Residuals

Table 10: Kolmogorov and Shapiro Tests

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.138	31	.141	.968	31	.462

Table 11: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.536	1	11.536	51.030	.000(a)
	Residual	5.426	24	.226		
	Total	16.962	25			
2	Regression	12.937	2	6.468	36.962	.000(b)
	Residual	4.025	23	.175		
	Total	16.962	25			

Chapter V

Discussion

This chapter provides a general overview of the research effort, which includes a restatement of the problem, purpose, objectives, and methodology. It continues with a discussion of the major findings on the employees' dissatisfaction factors and the variables that lead to company's long term success based on employees' opinion. This chapter provides implications and suggestions to the participating boat manufacturing companies; and it concludes with recommendations for future research.

General Overview

From a practical perspective, turnover is costly by any standard. The average cost is \$3,500.00 to replace one \$8.00 per hour employee (Ross Blake, 2006). According to the BLS, the turnover rate in manufacturing industry is 31.5 percent annually (BLS, 2006). The ultimate goal of this study was to provide boat manufacturers with fact-based input for decision-making in improving employee turnover in their assembly sections.

The specific research questions included:

- o What are the major factors that have an effect on employee concerns over company long-term success in the boat manufacturing industry?
- o What is the correlation between these factors?
- o Can these factors be influenced to reduce employee turnover?

The research design used a quantitative technique to conduct this investigation. It was based on an employee satisfaction survey that was sent to assembly workers in boat manufacturing companies located in the south-east coast. Only 21 percent of the surveys were completed and returned; only 18 percent of the mailed surveys could be used in the analysis. (Company 5 was omitted because its responses were all 3 or 4.) Unfortunately, the low response rate does not contribute to the reliability and validity of this research even though many attempts were made to convince companies to cooperate and participate.

Summary of Findings

Based on the data received, the first two questions were answered. Namely, those factors highly correlated with employees' perception of the company's long-term success were identified. They are as follows:

- supervisor encourages suggestions,
- employees informed about matters affecting them, and
- involvement on implementing changes

All of these factors are based on employee's association with management. Thus, it seems that employees' perceptions about a company's long-term success are tied to its interactions with management.

The last question was not answered by this research because it requires follow-up. Specifically, an instrument is needed to obtain feedback from those employees who do leave. (This data was not made available by all responding companies.) Then a longitudinal study would be required over several years to determine whether recommended changes were implemented and to capture improvements in retention.

In addition to demographics, other variables found not to be significant included:, the employees' answers were not different than neutral about these variables like happiness about the training, providing of recognition on a job that is well done, and supervisor's encouragement to employees about their suggestions. However, these variables were not significant to this study.

Implications and Suggestions

As a result of the data analysis, the researcher identified some implications that can be used to decrease the dissatisfaction factors that may potentially lead to high employee turnover due to employees' concern about the company's long term success. The primary implication is that employees want to be empowered. The question is how to do so while continuously improving productivity and quality. Suggestions include the following:

- Encouragement of employees to develop and enhance their creative problem-solving skills.

- Improvement of communication skills of all employees and opening of communication channels
- Improved rate of implementing changes and involvement of employees in those changes.

Recommendations for Future Research

Analysis of the data and the literature review form the basis for these recommendations:

- 1- Further research could be conducted by using interviews and exit surveys to determine factors that contribute to employee turnover in the boat manufacturing industry.
- 2- National research could be conducted on factors that contribute to employee turnover and shared.
- 3- The researcher recommends the need of a study to be conducted on overall employee turnover for companies in the boat industry, across all functional areas.
- 4- Perform a more qualitative survey that included employees' attitudes and non-company factors.

Finally, from this study, the investigator concludes that employees want to be confident that management has their best interest in mind when making decisions about the long-term success of the company.

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APPENDICES

Appendix A

Permission Letter

Date

HR Specialist
Name of Company
Address

Dear HR Specialist:

My name is Karima Tayeb. I am a graduate student in the Department of Industrial and Information Engineering at The University of Tennessee, Knoxville (UTK). I am writing to solicit the participation of your employees in a survey to collect data for my thesis, which is a partial requirement for a Master of Science degree. This input is needed for research in retention of assembly workers in boat-manufacturing companies. If you agree to participate in this study, your assembly employees will complete a survey during their regular shift and it would be upon your request when you want the survey to be administered. or your HR department may provide me with relevant data that you have recently collected in your own employee satisfaction survey. Completion of this survey is estimated to take no more than twenty minutes.

All of the information obtained will be kept confidential. Your company name will not be used, and no information about your company or employees will ever leave the university premises. The survey will be marked with a number for data recording and analysis purposes only. Only I will ever know the assigned number. There are no risks associated with participation in this study, and most employees enjoy the opportunity to express their opinions.

The information collected from this study will be published in my thesis and presented at research conferences for my discipline. The survey results should help us learn more about the factors that contribute to high employee turnover in assembly area. The results will be shared with all participants, and we hope that such information would be useful to your company. The thesis will be available in the Hodges library on the UTK campus.

My advisor, Dr. Denise Jackson has approved the survey. Her contact information is either (865)974-5578 or djackson@utk.edu. We at UTK appreciate the participation of people like you who help in carrying out the mission of developing knowledge through research. If you have any questions about the research, you may call me at (865) 974-

0625 or (865)300-3062. If your company agrees to participate, please confirm via e-mail to ktayeb@utk.edu stating when the survey will be administered. I thank you for your time and assistance.

Sincerely,

Karima Tayeb

Appendix B

CONSENT FORM

The University of Tennessee
Department of Industrial and Information Engineering

Title of Project: Retention Analysis of Assembly Workers in Boat Manufacturing Industry.

Principal Investigator: Karima Tayeb (865-974-0625, ktayeb@utk.edu)
Other Investigators: Denise Jackson, Ph.D. (865-974-5578, djackson@utk.edu)
Charles Aikens, Ph.D. (865-974-7643, haikens@utk.edu)
Rapinder Sawhney, PhD. (865-974-3333, sawhney@utk.edu)

You are invited to participate in a research study about assembly workers retention in boat manufacturing industry. The purpose of this study is to investigate factors that lead to high employee turnover in the assembly area. Data collected during the survey will be used to analyze the reasons behind the high assembly employees' turnover.

Procedures

The participant agrees to the following procedures in order to participate in this study. The survey-questionnaire contains 2 main sections: (1) Demographic and basic operator information (2) overall section that consists of various questions about the employee satisfaction in their work area.

Risks

While filling out the survey, no pain, discomfort, injury, or risks in any way are anticipated in participation. If significant pain, injury, or discomfort is experienced during completion of this survey, I will stop immediately and notify the investigator of the situation. I may refuse to answer any questions and may discontinue this study at any time.

Benefits

There are no benefits to me other than the psychological benefits that come from knowing that I assisted in a study that could possibly help present and future assembly workers retention.

Alternative Procedures

There are no alternative procedures incorporated into this study.

_____ Participant's initials

Emergency Medical Treatment

The University of Tennessee does not "automatically" reimburse subjects for medical claims or other compensation. If physical injury is suffered in the course of research, or for more information, please notify the investigator in charge, Karima Tayeb (865-974-0625)

Time Duration for Completion of Forms

To complete the survey-questionnaire information will require approximately 20 minutes.

Confidentiality Statement

Your participation in this study is confidential. The investigators will be the only persons with access to the survey information. This study will be subject to the usual confidentiality standards applied to normal research studies. In the event of any publication resulting from this study, no identifiable information will be disclosed.

Right to Ask Questions

You have the opportunity to ask any questions that you may have regarding this study and I am confident that they will be answered to your satisfaction.

Compensation

There is no compensation, monetary or otherwise, for participating in this study. You also understand that in the event of any physical or emotional injury resulting from my participation in this study will result in neither financial compensation nor free medical treatment from the University of Tennessee.

Participation

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed

CONSENT

I have read the above information and agree to participate in this study. I have received a copy of this form.

HR's name (print) _____

HR's signature _____

Date _____

I, the undersigned, have defined and explained the studies involved to the above participant.

Investigator

Date _____

Appendix C

Employee Satisfaction Survey

Instructions:

- * Permit yourself about 20 minutes to complete the entire survey.
- * Read each question carefully & do not think too long about your answer
- * Please answer every question

1st Part: Background Information

1) Please circle your department

Rigging

Final Finish

2) Please indicate your Gender

Male

Female

3) Please indicate your approximate Age

Less than 20 years old

Between 20 & 30 years old

Between 30 & 40 years old

Between 40 & 50 years old

Above 50 years old

4) How long have you worked for your company?

Less than 1 year

1 to 3 years

3 to 6 years

6 to 10 years

10 to 20 years

20 to 30 years

Over 30 years

2nd PART: Employee Satisfaction Feedback

	Strongly Disagree	Disagree	Partly Disagree / Partly Agree	Agree	Strongly Agree
I feel that the amount of work I am expected to do is reasonable					
In my work area the proper amount of emphasis is placed on quality					
when problems arise, we are encouraged to take action quickly to resolve problems					
Your immediate supervisor encourages suggestions from employees					
I believe the information that I get from my immediate supervisor, management of my department, & senior management					
Management of my department does a good job of acting on employee suggestions, involving employees in decisions that affect them, & encouraging frank discussion of problems					
My department achieving has a strong focus on the customer, employee involvement in problem solving, & commitment to quality					
I get enough information about the needs of external customers and the needs of other employees or departments who depend on services or work done in my area					
I am confident that my company will have long term success					
I value social events offered by my company					
My work units meet regularly					
I am happy with the training offered by my company					

13) I believe the following factors are strengths that help us better implement change

	Most Important	Important	Least Important
Employee Empowerment			
Supervisor's acceptance of change			
Senior management visibility and support			
Company culture			
Employee communication efforts			
Adequate management skills			
Understanding how my work contributes to my company's success			
Sufficient employee benefits			

14) Indicate how you think the factors listed below have changed in the past year

	Don't know	Changed for the worse	Stayed the same	Changed for the better
Quality of Upper Management				
Quality of Supervisors				
Rate of implementing changes				
Responsiveness to our customers				
Management Responsiveness to employees				
Clarity of Company goals				
Your ability to work productively				
Work Social Environment				
Employee Benefits				
Work Facilities				

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
15) Your department has a strong commitment on quality					
16) Overall, how satisfied are you with your employee benefits					
17) Overall, for the work you do, please rate how satisfied you are with your pay					
18) The amount of responsibility you are given on the job					
19) The company has done a good job of providing the training I've needed to do my job					
20) The company has done a good job of providing opportunities for career development					
21) Employees in my work area are encouraged to use their own judgments to get the job done					
22) I have a clear understanding of my job responsibilities					
23) Management shows genuine interest in the well-being of employees					
24) Your immediate supervisor keeps employees informed about matters that affect them					
25) Your immediate supervisor provides recognition for a job well done					
26) Your immediate supervisor deals fairly with everyone					
27) Your immediate supervisor solves job-related problems					
28) Your immediate supervisor encourages teamwork					
29) Your immediate supervisor gives you adequate feedback on your performance					
30) My immediate supervisor encourages suggestions from employees					

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
31) I think my performance on the job is evaluated fairly					
32) My performance appraisals/ progress reports are conducted on a regular and timely basis					
33) My immediate supervisor does a good job positively motivating employees					
34) Management does a good job of keeping employees informed about matters which affect us					
35) I have the information I need to do my job					
36) Adequate measures are taken at my location to ensure employee safety					
37) We are trying hard to control the cost of waste in my area					

38) I have a good understanding of the steps we are taking to reach my plant or office's goals

☐ Yes

☐ No

	Very Poor	Poor	Average	Good	Very Good
39) Availability of support personnel					
40) Availability of tools or equipment					

Vita

Karima Tayeb was born in Casablanca, Morocco on July 21, 1979. She graduated from Groupe Scolaire El-yassamine in 1998. She received her Bachelor of Science degree with a major in industrial engineering from the University of Tennessee, Knoxville. Karima is currently pursuing her Masters in Industrial and Information Engineering at University of Tennessee, Knoxville.