

May 2015

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Recommended Citation

Tomal, Daniel R. and Jones, Kevin J. Jr. (2015) "A COMPARISON OF CORE COMPETENCIES OF WOMEN AND MEN LEADERS IN THE MANUFACTURING INDUSTRY," *The Coastal Business Journal*: Vol. 14 : No. 1 , Article 2.

Available at: <https://digitalcommons.coastal.edu/cbj/vol14/iss1/2>

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A COMPARISON OF CORE COMPETENCIES OF WOMEN AND MEN LEADERS IN THE MANUFACTURING INDUSTRY

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ABSTRACT

This study compared the rankings of fourteen leadership core competencies for women and men managers in middle management and women and men in first-line supervisory positions in five manufacturing companies in the Midwest. Surveys were completed by the respondents and follow-up interviews were conducted. Results indicated that there were no significant differences in the rankings of core competencies between women and men supervisors or women and men managers. However, all supervisors (women and men combined) ranked mentoring and coaching employees higher than all managers ($p < .05$), and all managers ranked managing finances and employing strategic leadership higher than the supervisors ($p < .05$). It appears that the role of the leader position may be a more determinant factor in selecting core competencies than the gender of the leader. Including these core competencies in leadership professional development is recommended.

The study of competencies in leadership and management is a well-researched area. Many articles and books have been written discussing leadership and management competencies. On the other hand, there are surprisingly few studies that do comparisons of these competencies between men and women especially in the manufacturing industry. In this article, we seek to address a gap in the literature by investigating leadership and management core competencies in the manufacturing industry.

COMPETENCIES IN LEADERSHIP AND MANAGEMENT

The concept of competencies has been popular in leadership and management literature for many years. Competencies have become standard vernacular for discussing the necessary components for successful performance. It has been argued that competencies are the “critical resource” enabling organizations to reach strategic and competitive objectives (Nordhaug and Gronhaug, 1994).

Competencies are used to determine the performance necessary to achieve desired outcomes (Levenson, Van der Stede and Cohen, 2006; Laguna, Wiecheteck & Talik, 2012; Wickramasinghe & De Zoyza, 2009). While there are many definitions of competencies, they can be defined as the knowledge, skills, abilities and behaviors that enable to a defined performance outcome (Campion, et. al., 2011; Vakola, Soderquist and Prastacos, 2007; Spencer & Spencer, 1994, Singh & Khamba, 2014; Barber & Tietje, 2004; Boyatzis, 2011; McLagan, 1980).

The study and application of competencies to management emerged in the late 1960s and 1970s from industrial-organizational psychology research (Spencer, McClelland and Spencer, 1994). McClelland (1973) is often credited with associating competencies with job performance. In “The Competent Manager” Boyatzis (1982) reviewed the characteristics of a competent manager. Boyatzis (2011) has noted the continued evolution of the study of competencies and has categorized competencies into three broad areas: Cognitive, Emotional Intelligence and Social Intelligence competencies.

The identification of leadership and managerial competencies has come from both scholarly researchers and practitioners (e.g., Abraham, Karns, Shaw & Mena, 2001; Spencer & Spencer, 1994; Eichinger & Lombardo, 2005; Rath & Conchie, 2008; Ulrich, Zenger, & Smallwood, 1999; Zenger & Folkman, 2002). The popularity of competencies can be attributed to the elegance in which they enable the description of desired performance characteristics.

Competencies are important for leaders as they guide performance, can be measured and can be learned (Intagliata, Ulrich & Smallwood, 2000). Northouse (2014) describes competencies as one part of the “Skills Model” of leadership and includes problem-solving skills, social judgement skills and knowledge. The skills based approach which includes competencies emphasizes the capabilities that enable leadership performance (Northouse, 2014).

A common view in the literature is that leadership and management competencies are can be generally applied across industry and function (Boyatzis 1982, 2011; Spencer & Spencer, 1994; Eichinger & Lombardo, 2005). This view suggests that the leadership and managerial competencies are not distinctive to the industry or function (Dainty, Cheng & Moore, 2004; Ardit, Gluch & Holmdahl, 2013; Dreyfus, 2008; Barber & Tietje, 2004). Although leadership and management competencies may be similar across industries and functions, the study of competencies within a specific industry or area may be a more useful way to research competencies due to the influence that firm strategy may have on competency evaluation (Youndt, Snell, Dean & Lepak, 1996).

At the organizational level Prahalad and Hamel (1994) in their seminal strategy book “Competing for the Future” describe an organization’s competence as “a bundle of skills and technologies that enables a company to provide a particular benefit to customers.” Ulrich and Lake (1990, 1991) describe organizational core competency as a capability. This capability enables strategic objective attainment (Prahalad & Hamel, 1994; Ulrich & Lake, 1990. Considering the concept of organizational core competency, one can argue that, within an organization there are individual (leadership and management) core competencies that comprise the organization’s core competence.

In this study, we are operationalizing individual leadership and management core competencies as being the essential knowledge, skills, abilities and behaviors that enable the organizational member to perform optimally and support the organization in meeting a defined performance outcome. Identifying the core competencies enables the organization to develop those competences that can enable the organization to reach desired objectives.

COMPARING COMPETENCIES BY GENDER

In seeking to define idiosyncratic sets of competencies, some authors have tried to distinguish competencies by gender. While not always explained in terms of competencies, some studies suggest there are differences in the competencies of men and women leaders. Tannen in her seminal book, “You Just Don’t Understand: Men and Women in Conversation (1991),” discusses men and women conversational styles describing clear differences between men and women’s communication style. Since communication is a major component of leadership, this work suggests potential leadership competency application by women and men.

Sandberg (2013) in her book “Lean In” has helped reopen the dialogue about potential differences between men and women leaders. While not a researched-based work, Lean In gives a contemporary argument that there are differences between men and women leadership competencies. This not to imply that Sandberg is saying one gender or the other has better competencies but that different competencies are employed in the workplace. Others believe the way women leaders apply their competencies may represent advantage compared to male leadership approaches (Eagly & Carli, 2003).

Another perspective suggests there are no significant differences between men and women leaders. Donnell and Hall (1980) in their comparison of 2000 men and women managers found there is no difference in the way women practice management compared to men. Later, Powell (1990) explains that the differences between women and men leadership style is mostly based on perception and stereotype and states that there are “no differences” between men and women managers. Arditi, Gluch and Holmdahl (2013) find there are differences in the competencies of men and women but there are many similarities.

Sometimes the differences are rooted in the perceptions others have of men and women leaders and managers. Dobbins and Platz (2006) concur with Powell (1990) in describing that there similarities in the competencies found in male and female managers but found that the organizational member perception was that men are more effective than women. Another finding is that women even with similar competencies may be held to a different and higher standard of competence as compared to men (Eagly & Carli, 2003; Carli & Eagly, 2001). The differing expectations toward women may manifest in a form of prejudice (Eagly & Karau, 2002). This higher standard expectation and/or prejudice may result in the perception that some women are not as capable as men who do not face the higher standard for performance.

In addition to differing expectations compared to men, other challenges may emerge that could affect the perception of the women leaders competency. Catalyst (2004), reports that women encounter a different work environment including stereotypes and cultural challenges. These findings are mirrored by various authors (Watts, 2009; Arditi, Gluch & Holmdahl; 2013 Klenke, 2011). The reasons for this different a perceptions are multifaceted but may be reduced to a simple variable ... the numbers of women and men in managerial and leadership positions.

This study is focused in the manufacturing industry. While there are many studies that focus on manufacturing leadership and management, few have focused on competency differences between men in women. Like many industries, manufacturing is traditionally male dominated, especially in leadership roles. In 2013, the percentage of women in all manufacturing in the United States was only 27% down from a peak of 32% (Hagerty, 2013; Kurtzleben, 2013; Bureau of Labor Statistics; 2012).

This reduction in the percentage of women in the manufacturing workforce is contrasted with the growth from January 2010 to February 2013 (Schilling 2013). The numbers are imbalanced when you consider that in the US manufacturing women comprise only 2.0% of the CEOs and 11% of the Executive Officers (Giffi & McNelly, 2013). With women representing such a smaller percentage of those in senior leadership, it is a fair assumption that there is likely imbalance at the middle management and supervisory levels.

Given this imbalance and the likely different experience women have when serving in a leadership or manager role, it is an interesting question to see if women view their core competencies in the same way that men view them. In an environment which is so heavily dominated by men, it may be possible to determine a contrast between men and women in the perception of core competencies necessary for effective leadership performance.

Study Focus and Questions

The basis of this study was developed as an outgrowth of consulting work facilitated by the authors in multiple organizations. In this work the authors have recognized the continuing value of a competency-based framework of analysis to understand the ways in which leadership and management performs. Of particular concern and interest are the differences in how men and women in leadership and management may perceive the competencies necessary for optimum organizational performance in an industry where few women hold leadership and management roles.

General questions that emerged from the literature for this study were: “What are the most important core competencies for supervisors and managers in manufacturing companies?” and “are there differences in the importance of the core competencies between men and women leaders?” These questions guided our formulation of three research questions to guide our inquiry, which are:

1. Is there a significant difference in core competency rankings between women and men supervisors in the manufacturing industry?
2. Is there a significant difference in core competency rankings between women and men managers in the manufacturing industry?
3. Is there a significant difference in core competency rankings between all supervisors (women and men combined) and all managers (women and men combined) in the manufacturing industry?

METHOD

Subjects

The subjects of this study consisted of a total of 78 participants--15 women and 28 men supervisors, and 14 women managers, and 21 men managers in five different manufacturing companies in the Midwest United States. Supervisors were defined as leaders who were acting in the capacity of first-line supervisor positions. Managers were defined as individuals holding a middle management position in the manufacturing company. The sample did not include chief operating officers or presidents of a company. The subjects came from diverse economic, cultural, ethnic, gender, and academic backgrounds.

Procedures

A two-part questionnaire was used in this study. Part one consisted of a list of 14 core competencies in which the respondents were asked to rate the competencies based upon their importance for performing the job of a manager (see figure 1). The second part consisted of an open-ended question that asked the respondent to describe any other core competencies that were important for a manager in working in this type of capacity in the manufacturing industry. In some cases, follow-up interviews were conducted with the respondents to gain further information on the core competencies and responsibilities of the positions.

The survey instrument included 14 core competencies developed by the authors based upon management competencies gleaned from the research literature (see figure 1). The core competencies were validated through a series of revisions by management expert opinions. Definitions were created to assist the respondents in defining each of the core competencies.

A series of interviews were also conducted with the leaders in helping to determine the core competencies and definitions. A standard Likert scale (5= most important and 1 = least important was used). Also, the scale included the option of “0” indicating that the leaders found the core competency to be irrelevant given they did not have job responsibilities in the area.

The survey included identification of the two types of leaders, managers and supervisors. Respondents were also asked to identify themselves as either a male or female. Most surveys were completed by the respondents in person and follow-up interviews were conducted. The respondents were asked not to include their names on the survey to ensure anonymity.

Figure 1. Core Competencies of Leaders

	<u>Core Competencies</u>	<u>Description</u>
1	Mentoring and coaching employees	Giving feedback and improving employee performance, and development
2	Leading and motivating employees	Leading and motivating staff for improved effective decisions performance in achieving company initiatives
3	Problem solving and decision-making	Addressing organizational and technical situations to achieve organization goals
4	Managing finances	Having good business acumen and financial skills enabling desired organizational outcomes
5	Managing resources and time	Managing resources and demonstrating effective time management and multi-tasking
6	Building teamwork	Building team collaboration and team cohesion
7	Managing change and continuous improvement	Leading and managing change and improvement initiatives
8	Communicating and listening to the team	Communication to enable organizational outcomes and encouraging conversation
9	Influencing and negotiating	Persuading and negotiating with others for organizational outcomes

10	Conducting employee evaluations	Conducting formal and summative employee evaluations and giving feedback
11	Understanding performance indicators and metrics	Interpreting organizational objectives and using performance data for organizational outcomes
12	Demonstrating strategic leadership	Having a strategic vision for the company and/or department
13	Working with diverse people and perspectives	Connecting and relating to people who think, act or are perceived as different from you
14	Expecting ethics and accountability	Holding employees to a sense of ethics and performance accountability

Limitations

There were several limitations of the study which included non-random selection, low and disproportionate sample numbers, and the lack of differentiation of the managers' positions within the companies. All the respondents who were asked to complete the survey were very cooperative and helpful in providing opinions about their jobs.

RESULTS

The values of the core competencies of all groups were averaged, and significant differences were calculated using a test of significance (see table 1). The findings indicated that the top five core competencies of importance for women supervisors were *building teamwork, mentoring and coaching, managing resources, expecting ethics and accountability* and *conducting performance appraisals*. The supervisors appeared to place a high importance on building a strong, high-performing group of employees. This is indicated by the need for mentoring, collaboration, time management and expecting high performance and accountability. While these core competencies were the most highly ranked, the other core competencies also seemed to be very important.

The least valued core competency was *employing strategic leadership*. Several of the interview comments indicated that first-line supervisors tended not to be involved in strategic leadership initiatives and creating visions and goals for the company or department as much as the management level. Comments also supported the highest ranked core competency with statements such as "I need to have a strong, dependable team to get work done," and "It is important to give good feedback and coaching to my people in order to ensure and meet performance expectations."

Several comments also indicated that all the core competencies were important although some were slightly more important than others as indicated in table 1. Also, based on the interviews, it appeared that supervisors don't consider the gender of the leader to be important in selecting the core competencies but rather the actual position of the first-line supervisor. In other words, it seemed that the role and responsibility of the first-line supervisor in getting work done appears to be a stronger factor than the gender of the leader. In fact, several people commented that little concern is given regarding their own personal gender as much as the need for getting performance

results. Also, several women supervisors commented that they are accepted in the role of supervisors equally with men.

Table 1. Rank Order of Women Supervisor Core Competencies

	<u>Core Competencies</u>	<u>Mean</u>
1.	Building teamwork	4.85
2.	Mentoring and coaching	4.80
3.	Managing resources	4.78
4.	Expecting ethics/accountability	4.71
5.	Conducting appraisals	4.71
6.	Leading and motivating	4.60
7.	Communicating to employees	4.57
8.	Using performance indicators	4.40
9.	Solving problems	4.40
10.	Managing change	4.21
11.	Working with diverse people	4.21
12.	Managing finances	3.50
13.	Influencing employees	3.39
14.	Employing strategic leadership	3.36

The top five core competencies of importance for men supervisors were *mentoring and coaching, leading and motivating, expecting high ethics and accountability, solving problems and decision making, and building teamwork* (see table 2). The top five rankings were very similar to the women supervisor rankings. Likewise, the men supervisors ranked *employing strategic leadership* as the least important core competency.

Comments in interviews were similar to the women supervisors in that they do not participate as much in creating vision for the company or strategic planning. They tended to place a very high importance on building a strong team in order to get the day-to-day work completed. Several men supervisors commented that they generally work well with the women supervisors and find little differences or conflict as a result of gender. Several comments also indicated that it is important to create high performance expectations to building upon collaboration and give good feedback to their team members.

Table 2. Rank Order of Men Supervisor Core Competencies

	<u>Core Competencies</u>	<u>Mean</u>
1.	Mentoring and coaching	4.71
2.	Leading and motivating	4.57
3.	Expecting ethics/accountability	4.46
4.	Solving problems	4.43
5.	Building teamwork	4.43

6.	Conducting appraisals	4.41
7.	Managing resources	4.41
8.	Managing change	4.11
9.	Communicating to employees	4.11
10.	Influencing employees	3.35
11.	Managing finances	3.50
12.	Using performance indicators	3.40
13.	Working with diverse people	3.83
14.	Employing strategic leadership	3.59

The top core competencies ranked by women managers consisted of *leading and motivating*, *employing strategic leadership*, *communicating to employees*, *using performance indicators*, and *solving problems and making decision* (see table 3). Of least value were the core factors of *managing finances* and *influencing employees*. Follow-up interviews indicated that women managers valued all the core competencies and especially felt that leading and motivating people was a critical competency for a manager.

Several women managers indicated they get involved and responsible for strategic leadership and creating vision for the company and department. This was an especially important core competency for middle management. Another core competency, using performance indicators and metrics, appeared to be important to women managers in identifying performance standards and holding people accountable for meeting these standards. Like the women and men supervisors, women managers appeared to find little difference between women and men managers and emphasize the importance of roles and responsibilities of their management position.

Table 3. Rank Order of Women Manager Competencies

	<u>Core Competencies</u>	<u>Mean</u>
1.	Leading and motivating	5.00
2.	Employing strategic leadership	4.78
3.	Communicating to employees	4.71
4.	Using performance indicators	4.57
5.	Solving problems	4.36
6.	Expecting ethics/accountability	4.36
7.	Managing resources	4.28
8.	Building teamwork	4.07
9.	Mentoring and coaching	4.00
10.	Managing change	4.00
11.	Working with diverse people	3.71
12.	Conducting appraisals	3.64
13.	Influencing employees	3.36
14.	Managing finances	3.50

The top core competencies ranked by the men managers consisted of *mentoring and coaching*, *solving problems*, *expecting ethics and accountability*, *managing change*, and *managing finances*

(see table 4). The men managers placed a high value on *mentoring and coaching people* and *solving problems and making decisions* more than the women managers. However, this was not statistically significant. Of least importance were the core competencies of *working with diverse people* and *influencing employees*.

Follow-up interview comments included statements such as “We are used to working with diverse people,” and “The role of women in supervisory and management positions is common today.” Several men managers also stated that there are not conflicts or differences between the genders of middle management and that the actual position and responsibilities is a more significant factor. Other comments included the important of establishing good leadership and managing change as well as the finances or the organization.

Table 4. Rank Order of Men Manager Core Competencies

	<u>Core Competencies</u>	<u>Mean</u>
1.	Mentoring and coaching	4.71
2.	Solving problems	4.67
3.	Expecting ethics/accountability	4.57
4.	Managing change	4.54
5.	Managing finances	4.50
6.	Leading and motivating	4.48
7.	Communicating to employees	4.46
8.	Building teamwork	4.33
9.	Using performance indicators	4.24
10.	Employing strategic leadership	4.09
11.	Managing resources	4.00
12.	Conducting appraisals	3.86
13.	Working with diverse people	3.71
14.	Influencing employees	3.67

All the core competency rankings of both women and men supervisors were combined and compared with the combined rankings of the women and men managers (see table 5). There was little significant difference among the core competencies for all the supervisors and managers combined. However, the supervisors rated more highly *mentoring and coaching* than the managers ($p < .05$)

Also, the supervisors indicated that *conducting performance appraisals* was more significant as compared to the managers ($p < .05$). The managers also placed a higher importance on *managing finances and employing strategic leadership* ($p < .05$). Otherwise, there were no significant differences found among the other core competencies.

Table 5. Comparison of Core Competencies between All Supervisors and All Managers

<u>Core Competencies</u>	<u>All Supervisors</u>		<u>All Managers</u>	
	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>
Mentoring and coaching	*4.74	.19	*4.42	.48

Leading and motivating	4.60	.25	4.57	.54
Solving problems	4.41	.39	4.50	.37
Managing finances	*3.53	.30	*4.09	.55
Managing resources	4.3	.25	4.23	.65
Building teamwork	4.53	.44	4.30	.65
Managing change	4.25	.48	4.30	.29
Communicating to employees	4.25	.54	4.40	.42
Influencing employees	3.69	.31	3.67	.40
Conducting appraisals	4.41	.39	4.38	.59
Using performance indicators	4.14	.69	4.30	.41
Employing strategic leadership	*3.48	.25	*4.37	.76
Working with diverse people	3.95	.71	3.71	.50
Expecting ethics/accountability	4.56	.25	4.49	.26

* $p < .05$

DISCUSSION

It appears based upon this study that the gender of the leader is of less importance than the role and responsibilities of the leader position. There appears to be little difference between women and men first-line supervisors in the core competencies. Both women and men supervisors value the importance of building a strong team, coaching, managing their time effectively and expecting high performance accountability. All the core competencies appear to be important to the supervisors as indicated by comments during the interviews.

There also appears to be little difference among the importance of the core competencies between women and men managers. Like the supervisors, interview comments indicated that leadership gender is of less importance than the role and responsibilities of middle managers. Some of the core competencies central for effective management include employing strategic leadership and managing finances of the organization.

This would tend to support much of the literature which indicates that these core competencies are key responsibilities of the middle management position. It should be noted that all the core competencies were valued by all supervisors and managers and that it is important to include all these core competencies in leadership and development programs.

Given that all supervisors and managers value all the core competencies it is suggested that management training and development program include these topics. Higher emphasis might be given to the more highly ranked core competencies. Also, middle managers might benefit in strategic leadership and finances, and first-line supervisors in the topics of mentoring and coaching employees.

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