

Work Values of Millennial Construction Management Students

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The construction industry is facing substantial challenges relating to employment, skilled labor shortages and human capital management. In addition to successfully recruiting new talent, companies must adapt to managing a millennial work force that research suggests has different career expectations than previous generations. The purpose of this research is to identify the current work values of construction management students. Data was collected via survey from a sample of students enrolled in an accredited 4-year Construction Science and Management program. The students were asked to rank the significance of 21 specific work values derived from the literature as they related to their future careers. Findings indicated that the three most significant work values to this sample of millennial students are *provide job security*, *provide a feeling of accomplishment*, and *provides an opportunity to earn a high income*. It is anticipated that an improved understanding of these work values will assist industry in adapting to the needs of this new generation of employees. Additionally, this understanding can assist academic institutions as they advise and coach students by allowing them to speak to trending values and student expectations.

Key Words: Work Values, Millennials, Human Resource Management, Construction Management

Introduction

The construction industry depends heavily on labor to accomplish its objectives. The increasing complexities of the construction industry along with challenges of global competitiveness and changing regulatory requirements have increased the need for highly educated and competent construction management graduates. Intelligence, flexibility, and adaptability are key attributes that employers are expecting from graduating students (Love et al., 2001). In order to meet these demands, human resource planning is an important part of managing employees to ensure appropriate personnel availability and skill sets for future projects (Dom et al., 2012). This industry need challenges companies to be systematic in managing their human resources if they wish to achieve and sustain a competitive advantage (Tarique & Schuler, 2010).

Research suggests that project-oriented companies, like many construction companies, have a particular need for a specific approach to Human Resource Management (Huemann et al. 2007). In the past, human resource development in the construction industry was generally conducted on the job with very few resources available at the project level for further training (Ferris and Judge, 1991). More recent trends such as shortages in skilled labor highlight the construction industry's continuing need for a strategy to effectively manage a changing workforce (Brandenburg et al., 2006). Understanding the work values of this up and coming work force is one component of preparing and designing a HRM program. Moore (2011) suggests that the underlying cause of worker shortage in the construction industry is its traditional and relatively outdated view of human resource management.

The purpose of this research is to identify the work values of students studying in a 4-year construction management program in the Southeastern United States. Although the scope is relatively limited, the reported findings of this project are a positive step in assisting employers in their design of HRM strategies for the next generation of

construction industry professionals. Additionally, this project provides a starting point for further research into this area. Findings have also been compared to a previous study measuring construction management student work values (Moore, 2011) in order to identify possible differences in student work values over time.

Literature Review

Work Values

Extant research includes many efforts to describe work values of employees and potential employees in various different industries. Ros et al. (1999) defined values as the “desirable, trans-situational goals that vary in importance as guiding principles in people’s lives”. Gahan and Abeysekera (2009) further suggest that values provide individuals with the ability to decide how to choose between different possible courses of action. Work values are often associated with work goals because values shape the way individuals view work, how they respond to certain work situation and how they perform in their designated roles (Gahan & Abeysekera, 2009). HRM literature defines work values in two categories: extrinsic and intrinsic. Extrinsic work values refer to those aspects of a job that benefit the employee materially, such as pay, promotion and good working conditions. Intrinsic work values refer to those rewards that come from the job itself, such as a sense of achievement, self-determination, and self-actualization (Ware, 2013).

One recognized limitation of studies relating to work values is their dynamic nature (Schwartz, 1994) and the inevitable subjectivity in interpretation of respondents. Despite this limitation, Warr (2008) suggests that the study of work values is important for two reasons. First, since work values influence employee behavior, it is important to examine how they operate in work scenarios. Second, to learn more about the value’s nature, measurement, and association with other components of employee performance. HRM researchers are particularly interested in understanding individuals’ value orientation to assist with employee retention, performance appraisals, and overall employee commitment (Ros et al. 1999). Furthermore, since an understanding of employee work values is a predictor of job satisfaction (Dawis and Lofquist, 1984), appropriately positioning and portraying company culture could impact potential employees’ willingness to work for an organization (Judge and Bretz, 1992).

In 1972, Manhardt published the Work Values Inventory (WVI). This inventory was originally developed to assess the importance of 25 different job characteristics. Manhardt later dropped 4 characteristics out of the original list for low factor ratings when tested. The remaining 21 work values were grouped into the following three over-arching constructs:

1. Comfort and security
2. Competence and growth
3. Status and independence

Since Manhardt’s original survey, other researchers have utilized the same format to study work value relationships with early work experiences and organizational commitment (Meyer et al., 1998). Similar to the project represented by this paper, Moore (2011) also adopted Manhardt’s WVI characteristics to measure construction management students’ work values.

Millennials in Construction

Millennials have surpassed *baby boomers* as the nation’s largest living generation according to population estimates released in May 2016 by the U.S. Census Bureau (Fry, 2016). These same *millennials*, individuals born between 1980 and 2000, made up 34% of the workforce in 2015 – a number that will increase until it is projected to peak within the next two decades (Hoover, 2015). Given current labor shortages, this is a significant consideration for the construction industry as it already faces a challenge in attracting, retaining and developing this evolving work force.

A substantial amount of research has been devoted to an improved understanding of the millennial generation (see Howe & Straus, 2009; Thompson & Gregory, 2012; Dries et al., 2008; Kowske et al., 2010). Despite a reputation for being entitled, disloyal, and self-centered, some research shows that millennials are not actually that different from

their older work colleagues. In a recent study conducted by the IBM Institute for Business Value, researchers state that differences among millennials, Gen X and baby boomer employees have been grossly exaggerated (Baird, 2015). According to the survey findings, these three generations share similar values, aspirations, attitudes and goals when it comes to work. Hoover (2016) with Fails Management Institute found similar misconceptions about millennials in the construction industry. This project surveyed over 200 millennials working in construction to measure their level of engagement and to explore what they expect from an employer. The following findings go against the grain of widespread millennial stigmas:

1. 74% expect to remain more than 5 years with their current employer
2. 96% are willing to work beyond what is required of them to help the business succeed
3. 93% feel proud to be a part of their company
4. 98% stated that it was important for them to understand their career path and opportunities within their company

In Moore's 2011 study of construction management students' work values and career expectations, the top 3 highest ranked work values were: 1) provides the opportunity to earn a high income, 2) provides a feeling of accomplishment, and 3) provides job security.

Methodology

The research design adopted for this study is a comparative, non-experimental approach. The methodology was approved by the Institutional Review Board as an exempt project prior to beginning data collection (IRB Protocol 2015409). Student work values were measured using a survey and then data was analyzed across demographic variables (e.g., gender, age, nationality, year in school, etc.) and a previously conducted similar study (Moore, 2011). One hundred and sixty-six surveys were distributed, but only 155 were usable as 11 of the responses were either incomplete or were not received before the deadline. The sample consisted of 149 undergraduate and 6 graduate students enrolled in an accredited construction management program in the Southeastern United States. The survey was pilot tested with 10 volunteer students and their feedback and level of understanding were noted. Researchers handed out the resultant final survey to students as hard copies during classes and collected responses upon completion. Instructors provided 15-20 minutes of class time for the students to complete the survey.

The survey instrument collected self-report responses related to the various work values. The purpose of the instrument was to collect data and allow for statistical analysis. The survey consisted of 13 questions, of which the first 12 gathered demographic variables. In accordance with Moore's (2011) methodology, Question 13 was developed based on Manhardt's (1972) Work Values Inventory. The survey consisted of 4 types of questions: dichotomous, multiple choice, Likert scale, and open-ended questions. The significance of the various work values were measured based on a 5-point Likert scale (1 = not significant, 2 = less significant, 3 = somewhat significant, 4 = significant, and 5 = highly significant).

Previous research using Manhardt's WVI validated these scales to measure work values along the three categories mentioned in the literature review. As reported by Moore (2011), in Meyer et al.'s (1998) slightly modified instrument, coefficient alpha values ranged from 0.63 to 0.72 for the construct of *comfort and security*, 0.65 to 0.80 for *competence and growth*, and 0.62 to 0.68 for *status and independence* where a value of 0.70 is generally considered an acceptable level of internal consistency (Nunnally, 1978). While these values are very close the acceptable level of internal consistency, the ability to compare outcomes with previous studies using the same measurement tool was believed to justify the continued use of the WVI as the basis for this project.

Basic descriptive statistical analysis was used to aggregate the sample's demographics (questions 1-12). Measures include gender, age, academic program enrollment, nationality, race, construction experience, desired professional position, type of work sought, desired sector of construction, and desired career path. In order to compare responses across various demographic groups, ANOVA tests were performed to determine the significance of differences between multiple groups within the sample, and *t*-tests compared differences between two groups where appropriate. In relation to Moore's comparative project, *t*-tests provided reliable confirmation of the significance of differences between the two study samples.

Results

As mentioned, the first set of questions on the survey collected the demographics of the sample ($n=155$). Table 1 describes the demographic profile of the respondents along six categories.

Table 1

Demographic Profile of Respondents

Variable	<i>N</i>	%
Gender		
Male	139	89.7%
Female	16	10.3%
Age		
<20 years	32	20.6%
20-24 years	105	67.7%
25-31	10	6.5%
Undisclosed	8	5.2%
Academic Year		
Freshman	21	13.5%
Sophomore	52	33.5%
Junior	41	26.5%
Senior	35	22.6%
Graduate	6	3.9%
Citizenship		
US	151	97.4%
Indian	4	2.6%
Race		
Caucasian	134	86.5%
African American	8	5.2%
Spanish/Hispanic/Latino	4	2.6%
Asian	4	2.6%
Undisclosed	5	3.2%
Construction Experience		
<1 year	46	29.7%
1-3 years	87	56.1%
>3 years	22	14.2%

Table 2 details the descriptive statistics for the respondent data on the 21 WVI work values. Higher average scores indicate a higher level of significance to respondents for the related work value.

Table 2

Work Values of Students

	Work Value	Min	Max	Median	Mean	SD
1	Permits a regular routine in time and place of work	1	5	4	3.57	0.95

2	Provides job security	2	5	5	4.53	0.65
3	Has clear-cut rules and procedures to follow	2	5	4	3.67	0.80
4	Provides ample leisure time off the job	2	5	3	3.55	0.94
5	Provides comfortable working conditions	1	5	4	3.75	1.01
6	Requires meeting and speaking with many other people	1	5	4	3.85	0.98
7	Intellectually stimulating	1	5	4	3.85	0.80
8	Requires originality and creativity	2	5	4	3.77	0.83
9	Allows me to make a social contribution by the work I	2	5	4	3.77	0.79
10	Satisfies my cultural and aesthetic interests	1	5	3	3.31	0.98
11	Encourages continued development of knowledge and skills	2	5	4	3.90	0.79
12	Permits me to develop my own methods of doing the work	2	5	4	3.90	0.79
13	Provides a feeling of accomplishment	2	5	5	4.48	0.65
14	Provides change and variety in duties and activities	1	5	4	3.83	0.85
15	Permits advancement to high administrative	2	5	4	4.14	0.84
16	Provides the opportunity to earn a high income	2	5	5	4.44	0.76
17	Requires supervising others	1	5	4	3.95	0.84
18	Is respected by other people	1	5	4	3.95	0.84
19	Requires working on problems of central importance to the organization	2	5	4	3.77	0.76
20	Permits working independently	1	5	4	3.65	0.82
21	Gives me the responsibility for taking risks	1	5	4	3.65	0.82

The significance of the various work values suggests the importance individual respondents gave to certain possible outcomes obtained within a working context (Elizur, 1984). Based on the student responses, we can see that job characteristics such as *permitting to work independently* (#20), *satisfying cultural and aesthetic interests* (#10), and *requires supervising others* (#17) are comparatively less significant. In contrast, the work values that received the highest significance ratings were *job security* (#2), *provides a feeling of accomplishment* (#13), and *provides an opportunity to earn a high income* (#16).

T-tests and ANOVA were used to assess the significance of differences across the demographic variables (significance is $p < 0.05$). Results indicate that there were some significant differences depending on respondent construction work experience. Specifically, those students with less than 1 year of construction experience (mean and SD) thought that *requires supervising others* (#17) was a less significant work value than students who had 1-3 years of construction experience ($p = 0.02$). While the cause for this difference is not definitive based on the available data, it is interest to note this change in work value perception based on increased work experience. Also, findings indicated that there was a statistically significant difference ($p = 0.02$) between students with 1-3 years of experience and those with more than 3 years of experience along the work value of *gives me the responsibility for taking risks* (#21).

Statistically significant differences were also noted depending on the student's academic year. Significance was identified between the academic years for 2 of the 21 work values using an ANOVA. *Has clear cut rules and procedures to follow* (#3) was identified as an item with significant differences. The researchers conducted post-hoc *t*-tests to identify where the difference actually was and determined that there existed significant differences between freshmen (mean = 4.00) and sophomores (mean = 3.52) ($p = 0.01$), freshmen (mean = 4.00) and seniors (mean = 3.43) ($p = 0.006$), juniors (mean = 3.80) and seniors (mean = 3.43) ($p = 0.03$), and seniors (mean = 3.43) and graduate students (mean = 4.33) ($p = 0.04$). Another significant difference was found between the different academic year for *allows me to make a social contribution by the work I do* (#9). Once again a post-hoc *t*-test was done amongst the variable and statistically significant differences were found between freshmen (mean = 3.38) and

sophomores (mean = 3.89) ($p = 0.007$), freshmen (mean = 3.38) and juniors (mean = 3.93) ($p = 0.007$), freshmen (mean = 3.38) and graduate students (mean = 4.33) ($p = 0.003$) and seniors (mean = 3.57) and graduate students (mean = 4.33) ($p = 0.01$).

One final analysis compared the results of this survey with those collected and reported by Moore (2011). Both projects were specific to construction management students, although the samples were from different universities. This study was conducted approximately 8 years after Moore's original study so a side-by-side analysis was conducted to determine if there were significant differences between the two student populations. Aggregated mean values between Moore's sample and this sample were used for this analysis. A t -test was performed for each of the 21 job characteristics to determine significant differences. The following list includes each work value that returned a significant p -value in this analysis followed by a directional indication where "+" means this study sample believed the listed work value was of more importance than Moore's sample, and "-" means this study sample believed the listed work value was of less importance than Moore's sample:

1. Has clear-cut rules and procedures to follow ($p = 0.04$): +
2. Provides ample leisure time off the job ($p < 0.001$): -
3. Provides comfortable working conditions ($p < 0.001$): -
4. Requires meeting and speaking with many other people ($p = 0.03$): -
5. Is intellectually stimulating ($p < 0.001$): -
6. Requires originality and creativeness ($p < 0.001$): -
7. Permits you to develop your own methods of doing the work ($p < 0.001$): -
8. Provides change and variety in duties and activities ($p < 0.001$): -
9. Permits advancement to high administrative responsibility ($p = 0.04$): -
10. Requires supervising others ($p < 0.001$): -
11. Permits working independently ($p < 0.001$): -
12. Is respected by other people ($p < 0.001$): -
13. Requires working on problems of central importance to the organization ($p < 0.001$): -
14. Gives you the responsibility for taking risks ($p < 0.001$): -

Due to our respective sample sizes and differences of location, it is unclear as to whether these differences are indicative of generational changes due to the passage of time, or simply differences related to our varying student bodies.

Discussion

The data is relatively self-explanatory however there are a few key findings worth highlighting here. Based on the findings we recommend that construction company HRM efforts focus on supporting environments and practices that enhance the work values that received the highest significance ratings from the respondents: *job security* (#2), *provides a feeling of accomplishment* (#13), and *provides an opportunity to earn a high income* (#16). We suggest that the greatest value for human resources would be to focus on these areas.

In comparison to Moore's study, there are two noteworthy findings as well. First, with the exception of only one work value, all other values that showed a statistically significant difference between the two samples were in the negative direction. In other words, students from the more recent sample generally placed comparatively less value on 13 of the 14 work values that had significant differences. The only work value that increased in significance between the two samples was *has clear cut rules and procedures to follow*. Reasons for this phenomenon are unclear based on the data available, however if the importance of this value continued to increase with the rising generation it would be key to creating a desirable work environment. It is also worth noting that while 14 of the work values showed significant differences between Moore's 2011 study, the top three work values are did not change. These three values were the top three from Moore's results and have remained significant to students despite the passing of time and the difference in sample location.

Recommendations for Future Work

The authors recommend that future work be conducted to increase the sample size and scope of this project to allow for wider generalization and improved statistical analysis of key work values. Analysis of some important variables were limited or insignificant due to small n values of certain demographics (e.g., international students, race, and gender) so it was difficult to determine differences and significance between those groups. Assuming the findings hold true to the wider population, the next step would be to analyze methods for enhancing company culture and HRM strategies along the top three work values. It would also benefit the generalizability of the findings to include students from other universities in the sample. Also, it would be beneficial to conduct this same research either longitudinally to compare student responses when they are freshmen versus when they are a senior to more strongly identify if and how individual values are changing through the academic experience. Alternatively, similar studies conducted with students from other disciplines might provide an interesting comparison. We also recommend that this survey be conducted every few years to continue to compare changing values and generational differences.

Additionally, a project is currently nearing completion that would compare these work values to student perceptions about what a career in the construction industry provides. This would allow for a comparison between what students think they value and what they are expecting to find in their careers. These findings will assist companies in their HRM efforts to attract, retain and develop the next generation of construction employees.

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