

# Effect of Work Values on Work Outcomes: Investigating Differences between Job Categories

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## Abstract

Organizational researchers have found that work values influence, or are influenced by, other factors. This article explores basic work value dimensions and examines their effect on work outcomes. Study 1 used an exploratory factor analysis of data from 6,500 working persons in Japan and identified 6 basic work values that varied by job category. Study 2 demonstrated that these work values influenced job outcomes such as satisfaction, a sense of personal growth, and perceived skills.

**Keywords:** Work Values, Job Satisfaction, Production and Technical Workers

## 1. Introduction

Values play an important role in people's behaviors, affecting their perceptions, attitudes, and motivations. While people's values shape their general beliefs about what is desirable or undesirable, they also have values specific to particular events or situations, including work values. Organizational researchers have focused on work values as an important factor influencing motivation and positive behaviors in the workplace. Work values are defined as "what a person wants out of work in general and also what components of a job are important to his or her work satisfaction" (Duffy, 2010, p. 52), or "beliefs about the desirability of specific outcomes of working" (Hatrup, Mueller, & Joens, 2007, p. 481). Work values or work orientations are more general and abstract than work goals or satisfaction, and they reflect an employee's general preferences toward not only their current job but also potential future jobs (Malka & Chatman, 2003; Vansteenkiste et al., 2007).

Organizational researchers have found that work values influence, or are influenced by, other factors. However, most previous research has focused on only one job category, such as nurses or IT professionals. Although this kind of research is important because work values of jobholders are reflected in job-specific work conditions, such research is not able to compare work values across different job categories. This article empirically examines work values and their relationship to work outcomes, taking differences between job categories into account. In this article, we report on two studies: Study 1 extracted basic work value dimensions and found that they differed based on job category. Study 2 examined the effect of work values on work outcomes.

## 2. Work Values and Their Effects

### 2.1 Dimensions of Work Values

Past research has addressed two basic issues concerning work values: determining the dimensionality of work values and identifying the factors that influence, or are influenced by, work values.

Work values are not a simple concept because work situations are complicated and workers can be interested in various aspects of the working situation. Exploring and establishing the dimensions of work values is important not only for

conceptualizing the construct, but also for conducting empirical studies that require work values to be operationalized in some way. In some cases, specific existing work codes have been utilized to create work value dimensions. For example, Dempsey (2009) created work-related values for nurses based on the American Nurses Association's Code of Conduct. Kidron (1978) considered work values based on the Protestant Ethic of the worker. However, when investigating workers in various jobs, adopting a specific work code is not appropriate because there is no general work code that applies to all job categories.

Other research has utilized a simple dichotomy between intrinsic and extrinsic work values (Gahan & Abeysekera, 2009; Hegney, Plank, & Parker, 2006; Hirschi, 2010; Vansteenkiste et al., 2007). For example, based on Katz (1993), Hirschi (2010) developed five intrinsic work value items (variety at work, helping other people, independence at work, leadership and responsibility, and interesting work) and another five extrinsic work value items (high income, job security, fast and easy entry to job, leisure time besides work, and prestigious work). Hegney et al. (2006) classified sixteen items into these two work value dimensions.

Some researchers have utilized more complicated classifications. Carruthers (1968) distinguished between three basic dimensions: extrinsic rewards, extrinsic concomitants, and intrinsic concomitants, and he identified fifteen sub-dimensions within these three value dimensions. Elizur (1984); Elizur, Borg, Hunt, and Beck (1991); and Cassar (2008) distinguished between material and instrumental and cognitive and affective work values. Wang, Chen, Hyde, and Hsieh (2010) identified people-related factors, job outcome, and the job itself as factors. Duffy (2010) dealt with influence, service, and meaning dimensions of work values. Zhang, Wang, Yang, and Teng (2007) created five work value dimensions: challenge, personal worth, equitable opportunity, social status, and personal development.

Hagstrom and Kjellberg (2007) considered six work value dimensions: social relations, self-realization, work condition, altruism, benefit/career, and influence. Hatrup, Mueller, and Aguirre (2007), referring to Hofstede (1980) and related studies, identified seven categories of work values: job security, high income, advancement opportunity, interesting work, autonomy in work, helpfulness to other people, and usefulness to society. Van Ness, Melinsky, Buff, and Seifert (2010) proposed another seven dimensions of work values: self-reliance, morality/ethics, leisure, hard work, centrality of work, wasted time, and delay of gratification. Additionally, using Super's Work Values Inventory—Revised (2008), Busacca, Beebe, and Toman (2010) discerned twelve work values. Finally, Warr (2008) defined work centrality as the perceived importance of the work role and considered fifteen work values regarding job characteristics.

Clearly, there is no consensus on the dimensionality of work values across different studies. To investigate the dimensionality of work values for people in different jobs, it is preferable to begin by asking general questions about various aspects of the work situation to determine the dimensionality of work values in an ex-post manner, rather than adopting a simple ex-ante dichotomy. It is also important to compare more complicated dimensions of work values with traditional classification schemes such as intrinsic and extrinsic values.

## *2.2 Antecedents of Work Values*

Another research goal is to identify the antecedents and consequences of work values. In terms of antecedents, some demographic factors, such as gender, age, and educational level, have been found to influence work values (Cassar, 2008; Hagstrom & Kjellberg, 2007; Hirschi, 2010; Warr, 2008). The differences or similarities in work values across various countries with different national cultures have also been investigated (Choo, Hendrick, & Keng-Howe, 2009; Elizur et al., 1991; Hatrup, Muller, & Aguirre, 2007; Hatrup et al., 2007; Latifi, 2006; Siu, 2003; Steyn & Kotze, 2004; Wang et al., 2010; Warr, 2008).

The relationship between general values—or beliefs—and work values has also been examined. For example, Hyde and Weathington (2006) addressed the relationship between personal-life values and work values. Duffy (2010) explored how intrinsic religiousness and spirituality influenced work values. Zhang et al. (2007) analyzed the relationship between work values and personality in Chinese students. Gahan and Abeysekera (2009) found that the effect of national culture on work values was mediated by individual self-construal (independent and interdependent).

In contrast, researchers have been less interested in the relationship between jobs and work values. Some studies have focused exclusively on specific job categories, such as nurses (Cooman et al., 2008; Hegney, Plank, & Parker, 2006), R&D professionals (Chang, Choi, & Kim, 2008), and IT professionals (Dinger, Thatcher, & Stepina, 2010). Most of these studies explained work values in terms of specific job characteristics and did not generalize their results beyond the job category they were interested in. One exception is a study by Hagstrom and Kjellberg (2007) that compared the work values of nurses and engineers.

However, work values are likely to vary by job category. Values are considered to lie at the center of cultural differences (e.g., Hofstede, 1980), and cultural differences exist not only at national or organizational levels, but also at the level of

job category. Different job experiences will encourage workers to have specific work values consistent with the job contents. Furthermore, a person might tend to choose a certain type of job in order to fulfill his or her own work values. Therefore, we propose the following hypothesis to be tested in Study 1:

Hypothesis I: People who hold different jobs will have different work values.

### 2.3 Consequences of Work Values

Because work values are a source of motivation, these values likely influence workers' behaviors, perceptions, and attitudes toward their work and work-related factors. Previous research has also examined these types of relationships (Butler & Vodanovich, 1992; Cheung & Scherling, 1999; Hegney et al., 2006; Hirschi, 2010; Kidron, 1978; Vansteenkiste et al., 2007; Wang et al. 2010).

In particular, past research has shown that intrinsic and extrinsic work values differentially influence work outcomes. For example, Kidron's (1978) ethical work values were positively related to commitment, and Wang et al. (2010) showed that intrinsic work values significantly influenced pay satisfaction and decreased turnover intention. Hirschi (2010) found that intrinsic work values had a positive impact on career development. In contrast to the positive work outcomes generally associated with intrinsic work values, extrinsic work values were found to produce negative work outcomes, or, at least, no positive work outcomes. Vansteenkiste et al. (2007) confirmed that extrinsic work values are associated with less positive outcomes and more negative outcomes. In fact, workers with high extrinsic work values tend to place the emphasis on external indicators of their worth, status, and success. According to Vansteenkiste and his associates, "adopting an 'outward' or 'having' orientation is likely to detract from psychological health because such an orientation thwarts the satisfaction of the basic psychological needs" (Vansteenkiste et al., 2007, p. 253). Hirschi (2010) found that extrinsic work values had no significant effect on career development, and Wang et al. (2010) also concluded that extrinsic work values were not associated with pay satisfaction. A study by Hegney et al. (2006) suggested a positive effect of extrinsic work values on satisfaction, but this study was limited to a specific job category (nurses), and the results were ambiguous. Therefore, we propose the following hypotheses concerning the effects of two kinds of work values to be tested in Study 2:

Hypothesis II: Work values classified as intrinsic will have a positive effect on work outcomes.

Hypothesis III: Work values classified as extrinsic will have a negative effect on work outcomes.

Note that we do not mean that all people holding a specific job behave the same or have similar attitudes toward work and the work environment. We also examined the relationship between work values and work outcomes within specific job categories, rather than solely between job categories.

## 3. Study 1: Extracting Basic Values

### 3.1 Objectives and Analytical Process

Study 1 was conducted to test Hypothesis I. To this end, a factor analysis was conducted on data from work values evaluations (described below) to extract basic work value dimensions. Next, a hierarchical regression analysis with job categories as independent dummy variables was conducted to examine how different job categories affect each work value dimension. Furthermore, one-sample *t*-tests were conducted to compare the discrete results of each job sample with the results from the entire sample in order to determine the specificity of each sample's work values.

### 3.2 Sample and Measures

We utilized data from "the survey of working persons in 2008," which was originally collected by the Works Institute Recruit Co. Ltd. (hereinafter WIR). The WIR offered this data to the Social Science Japan Data Archive, Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo, to make the data accessible to qualified academic researchers. The data were collected from 6,500 working persons in the Tokyo metropolitan area in Japan in the summer of 2008.

*Work values.* The respondents were asked to evaluate the degree of importance of 32 items regarding work values on a 5-point Likert scale (5 = "important"; 1 = "unimportant").

Respondents were also asked to provide their *gender* (1 = male, 2 = female), *age* (chronological age), *annual income* in units of 10,000 Japanese yen, and *employment status* (1 = full-time employment, 2 = part-time or fringe employment). These variables were also included in the multiple regression equations to control for their possible effects.

### 3.3 Result-1: Extraction of Basic Work Values Types

Of the 32 work value items, 3 items were omitted because an initial exploratory factor analysis (EFA) showed low commonality scores for these items. The EFA of the remaining 29 items produced 6 factors that had more than one eigenvalue (maximum likelihood procedure, promax rotation). According to the factor loading values for the original

items (Table 1), we named these 6 factors: challenging job, self-actualization, extrinsic rewards, power and authority, identification with the organization, and contribution to society. Challenging job (rotation sums of squared loadings [RSSL] = 6.200) was reflected in beliefs that something new should be acquired or produced through work. Self-actualization (RSSL = 6.295) referred to the quest for the ideal self. Extrinsic rewards (RSSL = 4.229) was defined as the desire for extrinsic rewards such as good pay, a good workplace, and promotion. Power and authority (RSSL = 4.343) was related to the desire for authority and power in an organization. Identification with the organization (RSSL = 4.215) was defined as the desire to have a strong sense of belonging to the organization and good relationships with coworkers. Contribution to society (RSSL = 4.532) referred to the desire to help and contribute to society.

As discussed above, in previous research, work values were simply divided into two categories: intrinsic and extrinsic. Of the six dimensions we identified, challenging job, self-actualization, identification with the organization, and contribution to society were considered to be associated with intrinsic work values. Extrinsic rewards was clearly considered an extrinsic work value. Power and authority was somewhat difficult to classify. If we follow the definition of extrinsic values put forward by Watts (1992), that extrinsic values involve “the traditional pursuit of success by advancing up the organizational hierarchy to achieve prestige, status, and high income” (Watts, 1992, p. 51), then power and authority could be considered an extrinsic value. However, acquiring a high-ranking, respectable position in an organization can be an effective way to obtain a challenging job or enhance self-actualization. Therefore, although power and authority was superficially classified as an extrinsic work value, it might be better to think of it as belonging to an intermediate category.

### 3.4 Result-2: Determining the Difference between Basic Work Value Dimensions among Job Categories

Although respondents' current jobs were initially classified into more than 200 narrow categories, we reclassified them into the following eight basic job categories: *service, production, clerical, technical, professional, management, sales, and others*. Then, we conducted a hierarchical regression analysis in order to examine the effect of different jobs (independent variable) on work values (dependent variable). After gender, age, annual income, and employment status were entered as control variables, seven dummy variables (0, 1) representing job category were entered into the equation. As shown in Table 2, job category had different effects on each work value. What constituted a challenging job varied by job category, whereas extrinsic rewards and identification with the organization were relatively unchanged across job categories.

Table 3 and Figure 1 show the differences between work values for different job categories. Asterisks in Table 1 indicate that the value for that job is significantly different from that of other jobs at a significance level of 1% or 5%. Respondents holding service jobs had significantly lower ratings for challenging job, power and authority, and contribution to society. Many service jobs are based on direct interpersonal relationships with customers. Dealing with a difficult customer might be challenging, but most regular business is routine and less challenging; intimate relationships with customers might not arouse feelings of a general link with society. Respondents holding production jobs displayed all work values, but ratings for extrinsic rewards were significantly lower than for other jobs. The routine nature of this kind of job likely reinforces this tendency. Respondents holding clerical jobs showed similar results as those with service or production jobs, and ratings for challenging job, self-actualization, power and authority, and contribution to society were significantly lower than for other jobs.

Compared to respondents holding clerical, service, or production jobs, who had low work values overall, respondents holding technical, professional, and management jobs generally had higher work values. Technical jobs were rated high on challenging job and power and authority, but low on identification with the organization. It might be easy to imagine technical workers who are interested in challenging technical matters but tend to lose sight of the relationship to their organization. However, the fact that technical workers emphasized power and authority was somewhat unexpected. Professional jobholders emphasized challenging job, self-actualization, identification with the organization, and contribution to society, but were less concerned with power and authority. This pattern of work values fits our image of professional jobs. In particular, the high value placed on contribution to society shows professionals' strong desire to be of service to society at large, not just to the organization they work for, although they also have strong identification with their organization. Respondents holding management jobs also rated challenging job, power and authority, and contribution to society highly, but had lower ratings for extrinsic rewards. Extremely high power and authority is a characteristic of this job category. Finally, for respondents holding sales jobs, no work value ratings except extrinsic rewards were significantly different from those of the remaining job categories. This suggests that sales job holders represent average workers.

Figure 1 also illustrates that work values created a different shape for each job category, supporting Hypothesis I, that work values would differ across job categories.

## 4. Study 2: Examining the Effect of Work Values on Work Outcomes

### 4.1 Objectives and Analytical Process

After Study 1 revealed six basic work value dimensions, Study 2 was conducted to validate Hypotheses II and III regarding the effect of work values on work outcomes. As described earlier, we considered challenging job, self-actualization, identification with the organization, and contribution to society intrinsic work values. Extrinsic rewards, and power and authority were considered extrinsic work values.

### 4.2 Sample and Measures

The data were the same as in Study 1. We adopted job satisfaction, overall satisfaction, sense of personal growth, perceived task performance skill, and perceived human relations skill as dependent variables that could be influenced by work values.

Job satisfaction was measured with one question item: "How satisfied are you with your current job?" However, the use of one item is too simplistic to capture a complicated attitude like feelings of job satisfaction. Therefore, overall satisfaction was also considered.

Overall satisfaction was measured by averaging responses to four items in the database that asked about degree of satisfaction with employment status, workplace, company, and job ( $\alpha = 0.854$ ). All these items were answered on a scale from "very satisfied" (5) to "dissatisfied" (1).

Sense of personal growth was measured with one question item: "How much personal growth do you realize through your current job?" Responses were made on a scale from "strongly have (a feeling of personal growth)" (5) to "do not have (a feeling of personal growth)" (1).

Perceived skill evaluation consisted of two dimensions: task performance and human relations. We used an average of six items (e.g., "the ability to collect and analyze information and identify problems") for perceived task performance skills ( $\alpha = 0.748$ ) and an average of four other items (e.g., "the ability to cooperate with others tackle a problem") for perceived human relations skills ( $\alpha = 0.875$ ). All items were answered on a scale from "have sufficient ability" to "do not have sufficient ability."

Gender, age, annual income, and employment status were also included in these analyses.

### 4.3 Results: The Effect of Work Values on Work Outcomes

After conducting correlation analyses between variables (Table 4), hierarchical regression analysis was conducted to examine the influence of the six work values identified in Study 1 on work outcomes. First, gender, age, annual income, and employment status were entered into the equation as independent variables in order to control for any effects of these variables. Next, the six work values were entered in the equation to examine the additional effect of these work values on work outcomes.

Table 4 shows inter-correlations between variables. First, with respect to the relationships between work values and other independent variables, while male workers had higher ratings for challenging job and power and authority, female workers emphasized self-actualization, extrinsic rewards, identification with the organization, and contribution to society. Although work values were not significantly correlated with age and contribution to society, older workers stressed power and authority, while younger workers weighted the remaining four work values more heavily. Furthermore, four of the six correlations between annual income and work values were significant and positive. Full-time workers placed greater emphasis on all work values except extrinsic rewards than part-time or fringe workers.

Table 5 displays the results of the hierarchical regression analysis using the entire sample. Both challenging job and self-actualization had significant positive effects on a sense of growth and both skill evaluations. Identification with the organization had a significant positive effect on all work outcomes except perceived task performance skills, and contribution to society had a significant positive effect on perceived human relations skills. Despite some non-significant relationships, we conclude that the findings above generally support Hypothesis II. On the other hand, although extrinsic rewards had a significant negative impact on all work outcomes, contrary to Hypothesis III we found that power and authority had a significant positive effect on three work outcomes. Therefore, Hypothesis III was supported for extrinsic rewards, but not for power and authority.

We also conducted a similar hierarchical regression analysis on each job category in order to test whether different relationships between work values and attitudinal factors vary between job categories. Table 6 only shows the number of significant relationships between each work value and work outcomes across job categories. In this table, "+" or "-" refers to the number of significant positive or negative effects for each work value, and "n.s." indicates the number of non-significant relationships.

As shown in Table 6, compared to the analysis based on the entire sample, fewer significant relationships between work values and work outcomes were observed when each job category was analyzed separately. In particular, self-actualization and power and authority had fewer significant effects on work outcomes.

However, different effects of some work values according to job category were also observed. First, identification with the organization resulted in four positive effects in the entire sample, but the same work value had five significant effects for production jobs and only two for service jobs. Most production workers have to work cooperatively in a closed plant, but sales workers often work alone outside the office. Furthermore, sales workers often work on commission. This pattern of results might reflect these differences in working conditions.

The different effects of contribution to society are also interesting. Specifically, it is not clear why contribution to society led to three significant positive effects on work outcomes for clerical jobs. Most clerical jobs involve working indoors, and the weighting of contribution to society in this job was significantly lower than for other job categories (see Table 3). Nevertheless, because of their work conditions, clerical workers might need to consider their contribution not only to the organization they work for, but also to society at large in order to achieve higher satisfaction. However, this is just speculation, and further investigation is needed.

## 5. Discussion and Conclusion

Study 1 extracted the dimensions of work values and confirmed that these dimensions differ based on job category. Although we made assumptions about the different characteristics of each job that led to a unique pattern of work values, it is also likely that people choose jobs that match their specific mixture of work values. In fact, some studies have addressed the relationship between students' work values and their career selections. For example, Carruthers (1968) investigated the relationship between work values and chosen careers in a sample of British students. Cassar (2008) found that work values were affected by students' university faculty. However, Busacca et al. (2010) and Van Ness et al. (2010) found that work value scores were significantly different between practicing workers and trainees or students. Therefore, work experience also has some effect on work values.

Study 2 addressed the relationship between work values and work outcomes. Our two hypotheses were generally supported, but the positive effect of power and authority on work outcomes was contrary to Hypothesis III. As discussed above, although power and authority was considered an extrinsic work value, it has characteristics of both intrinsic and extrinsic values. Our empirical result suggests that some people emphasized this particular work value not because authoritative positions can produce high income and a fulfilling life, but rather because it can contribute to a sense of fulfillment, similar to intrinsic rewards.

Study 2 also revealed different effects of work values on work outcomes based on job category. If we simply look at the empirical results averaged across job categories (Table 3), we might easily conclude that specific jobholders are generally happier than others. However, separate regression analyses for different job categories reveal that the relationships between work values and work outcomes differ between job categories and are more complicated than we originally assumed.

Although this study uncovered interesting effects of work values, we admit it has several limitations. First, work values are related to life values and society's cultural values. The data used in this study were collected from Japanese workers, so the extracted work values might reflect their specific cultural characteristics. Second, task classifications in this study might be too simplistic. The same job labels do not always have the same characteristics. Organizational researchers have created various measures of job characteristics (Fields, 2002), and future studies should consider using those measures to examine the relationship between job characteristics and work values.

Finally, all of the work outcomes in this study were subjectively evaluated by workers, so the gap between perceived and actual outcome needs to be considered. For example, if workers with stronger intrinsic work values evaluated their skills positively, this would not necessarily mean that they actually have higher skills. Therefore, the way in which different work values produce objectively desirable or undesirable work outcomes should be examined. Future work is expected to reveal whether different work values have an actual effect on measurable outcomes, or whether they only influence workers' perceptions and attitudes.

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Table 1. Factor Pattern Matrix and Factor Correlation Matrix

Factor Pattern Matrix						
	Factors					
	1	2	3	4	5	6
Demand innovation and ingenuity in working	.678	.005	.008	-.076	.017	-.039
Always acquire new knowledge and information	.676	-.043	.053	-.064	-.044	.156
Create completely new products and services	.522	.048	.030	.117	.009	.009
Always have challenging work	.501	.329	-.153	.157	-.004	-.041
Continue to grow	.401	.257	.009	-.058	.043	.052
Demand aesthetic sensibility or skill	.370	.175	.070	.124	-.042	-.089
Experience various jobs	.328	.007	.115	.052	-.063	.092
Do what I want to do as my job	-.083	.656	.147	-.031	-.101	.035
Have a sense of accomplishment	.203	.643	-.001	-.065	.040	-.020
Become the person I want to be	.042	.628	.071	-.057	.006	.071
Change in daily work routine	.198	.587	-.066	.084	-.097	-.029
Recognize my good performance	.068	.437	.037	.246	.090	-.113
Expect to get a raise in pay	.066	.035	.658	.095	-.056	-.049
Work for a sensible supervisor	.014	.078	.581	-.055	.067	-.045
Make good money	.086	-.063	.552	.216	-.155	.012
Work in a favorite area and at a good time	-.257	.266	.520	-.129	.054	.002
Work in a comfortable office	.224	-.072	.473	-.089	.078	.057
Work for a talented supervisor	.203	-.089	.378	.061	.113	-.064
Command others	.077	-.024	-.145	.706	.132	-.059
Have substantial authority	.210	-.153	.002	.595	-.019	.001
Do a job that gets attention	.024	.123	.017	.591	-.069	.056
Work for a large and well-known company	-.284	.023	.165	.554	.088	.049
Get respect for my job	.098	.087	.134	.327	.064	.166
Have an attachment to the company	.126	-.032	-.075	.017	.766	.012
Continue to work for one company	-.266	-.071	.032	.267	.625	.027
Have friendly relationships with coworkers	.174	.026	.183	-.181	.528	-.042
Contribute to society	-.087	.227	-.073	.028	-.006	.774
Contribute to improving the world	.267	-.161	.020	.033	-.011	.692
Be appreciated by other people	.038	.341	-.053	-.077	.132	.384
Factor Correlation Matrix						
Factor	1	2	3	4	5	6
1 (Challenging job)	1.000	.625	.399	.536	.456	.540
2 (Self-actualization)	.625	1.000	.472	.421	.576	.600
3 (Extrinsic rewards)	.399	.472	1.000	.391	.425	.335
4 (Power and authority)	.536	.421	.391	1.000	.301	.301
5 (Identification with the organization)	.456	.576	.425	.301	1.000	.489
6 (Contribution to society)	.540	.600	.335	.301	.489	1.000

Table 2. Effect of job category (dummy) on work values

Model		challenging job			self-actualization			extrinsic rewards		
		Beta	adj R <sup>2</sup> (ΔR <sup>2</sup> )	F (ΔF)	Beta	adj R <sup>2</sup> (ΔR <sup>2</sup> )	F (ΔF)	Beta	adj R <sup>2</sup> (ΔR <sup>2</sup> )	F (ΔF)
1	gender	.006			.101 ***			.121 ***		
	ages	-.106 ***			-.134 ***			-.137 ***		
	annual income	.204 ***	.061	93.364***	.122 ***	.022	33.595	.031 *	.026	39.568***
	employment st.	-.078 ***	(.061)	(93.364***)	-.036 **	(.023)	(33.595***)	-.048 ***	(.027)	(39.568***)
2	gender	-.011			.095 ***			.119 ***		
	ages	-.097 ***			-.127 ***			-.135 ***		
	annual income	.179 ***			.122 ***			.032 *		
	employment st.	-.078 ***			-.041 **			-.054 ***		
	service	.097 ***			.066 ***			.028		
	production	.003			-.009			.010		
	clerical	.040 **			-.032			.005		
	technical	.096 ***			.036 **			.009		
	professional	.130 ***			.109 ***			.013		
	management	.098 ***	.078	44.743***	.026	.038	21.297	.014	.028	15.762***
sales	.106 ***	(.018)	(15.982***)	.046 **	(.016)	(13.965***)	.059 ***	(.003)	(2.127**)	

N = 6,500, \*\*\*: p &lt; 0.01, \*\*: p &lt; 0.05, \* : p &lt; 0.1

Model		power and authority			identification with the organization			contribution to society		
		Beta	adj R <sup>2</sup> (ΔR <sup>2</sup> )	F (ΔF)	Beta	adj R <sup>2</sup> (ΔR <sup>2</sup> )	F (ΔF)	Beta	adj R <sup>2</sup> (ΔR <sup>2</sup> )	F (ΔF)
1	gender	-.140 ***			.164 ***			.120 ***		
	ages	-.029 ***			-.052 ***			-.026 *		
	annual income	.187	.094	148.869***	.066 ***	.020	30.398***	.131 ***	.020	29.759***
	employment st.	-.039 ***	(.095)	(148.869***)	-.077 ***	(.021)	(30.398***)	-.067 ***	(.020)	(29.759***)
2	gender	-.132 ***			.156 ***			.096 ***		
	ages	-.029 **			-.052 ***			-.021		
	annual income	.174 ***			.059 ***			.125 ***		
	employment st.	-.053 ***			-.084 ***			-.063 ***		
	service	.078 ***			.028			.015		
	production	.043 ***			-.010			-.042 **		
	clerical	.023			-.022			-.042 **		
	technical	.039 **			-.024			-.016		
	professional	.022			.044 **			.116 ***		
	management	.080 ***	.099	58.395***	.029	.024	13.884***	.009	.038	21.630***
sales	.076 ***	(.007)	(6.159***)	.020	(.005)	(4.376***)	.023	(.020)	(16.660***)	

N = 6,500, \*\*\*: p &lt; 0.01, \*\*: p &lt; 0.05, \* : p &lt; 0.1

Table 3. The differences in six work values across job categories

Job Category		challenging job	self-actualization	extrinsic rewards	power and authority	identification with the organization	contribution to society
service (N = 1130)	mean	-.067 **	.030	.019	-.055 *	-.002	-.054 *
	std dev	.917	.962	.897	.847	.908	.923
production (N = 542)	mean	-.223 **	-.172 **	-.075 *	.017	-.122 **	-.199 **
	std dev	.960	.956	.884	.890	.908	.939
clerical (N = 1261)	mean	-.120 **	-.125 **	.017	-.132 **	-.006	-.088 **
	std dev	.921	.936	.875	.910	.848	.897
technical (N = 669)	mean	.201 **	.041	-.040	.171 **	-.111 **	-.040
	std dev	.876	.876	.914	.859	.908	.896
professional (N = 706)	mean	.158 **	.273 **	.028	-.136 **	.155 **	.329 **
	std dev	.860	.867	.887	.944	.884	.872
management (N = 590)	mean	.324 **	.028	-.104 **	.417 **	.059	.122 **
	std dev	.818	.823	.805	.800	.807	.839
sales (N = 989)	mean	.023	.047	.117 **	-.010	.042	.020
	std dev	.915	.917	.874	.894	.870	.894
total (N = 6550+)	mean	.000	.000	.000	.000	.000	.000
	std dev	.919	.924	.885	.894	.882	.909

+: Other unclassified jobs are also included.

\*\* :  $p < 0.01$ , \* :  $p < 0.05$

Table 4. Result of correlational analysis (entire sample)

variables	mean	std dev	N	1	2	3	4	5	6
1 gender	1.420	0.494	6,500						
2 ages	38.650	11.196	6,500	-0.017					
3 annual income	402.410	292.783	5,788	-.545**	.304**				
4 employment st.	1.320	0.466	6,500	.412**	-.041**	-.550**			
5 challenging job	0.000	0.920	6,426	-.132**	-.042**	.212**	-.183**		
6 self-actualization	0.000	0.924	6,426	0.024	-.098**	.047**	-.055**	.740**	
7 extrinsic rewards	0.000	0.885	6,426	.087**	-.132**	-.050**	-0.013	.495**	.571**
8 power and authority	0.000	0.894	6,426	-.258**	.035**	.275**	-.204**	.639**	.508**
9 identification to the org.	0.000	0.882	6,426	.096**	-.034**	0.004	-.046**	.562**	.682**
10 contribution to society	0.000	0.909	6,426	.026*	0.018	.095**	-.082**	.644**	.714**
11 job satisfaction	2.822	0.660	6,497	.061**	.047**	.091**	-.048**	.113**	.121**
12 overall satisfaction	2.870	0.575	6,350	.077**	.056**	.123**	-.081**	.122**	.126**
13 growth	2.571	0.899	6,500	0.003	-.042**	.133**	-.141**	.321**	.287**
14 human relations skill	2.704	0.607	6,497	-.027*	.149**	.179**	-.087**	.334**	.298**
15 task performance skill	2.602	0.620	6,492	-.186**	.191**	.342**	-.214**	.405**	.321**

\*\* : p &lt; 0.01, \* : p &lt; 0.05

variables	7	8	9	10	11	12	13	14
1 gender								
2 ages								
3 annual income								
4 employment st.								
5 challenging job								
6 self-actualization								
7 extrinsic rewards								
8 power and authority	.483**							
9 identification to the org.	.527**	.395**						
10 contribution to society	.406**	.378**	.596**					
11 job satisfaction	-.035**	.068**	.206**	.138**				
12 overall satisfaction	-.034**	.054**	.235**	.162**	.900**			
13 growth	.101**	.211**	.290**	.263**	.464**	.467**		
14 human relations skill	.167**	.296**	.286**	.279**	.196**	.204**	.277**	
15 task performance skill	.154**	.373**	.236**	.271**	.200**	.208**	.315**	.610**

Table 5. Result of multiple regression analysis (entire sample)

jobs	models	variables	job satisfaction	overall satisfaction ( $\alpha=0.884$ )	a sense of personal growth	perceived human relations skill ( $\alpha=0.748$ )	perceived task performance skill ( $\alpha=0.853$ )
the whole sample (N = 6,550)	1	gender	.164 ***	.212 ***	.141 ***	.085 ***	-.014
		ages	-.002	-.006	-.098 ***	.080 ***	.090 ***
		annual income	.174 ***	.214 ***	.186 ***	.197 ***	.279 ***
		employment status	-.016	-.050 ***	-.094 ***	-.006	-.050 ***
	2	gender	.151 ***	.188 ***	.127 ***	.082 ***	-.002
		ages	-.013	-.019	-.082 ***	.104 ***	.126 ***
		annual income	.149 ***	.192 ***	.122 ***	.126 ***	.197 ***
		employment status	-.002	-.034 **	-.068 ***	.020	-.026 *
		challenging job	.025	.034	.191 **	.147 ***	.225 ***
		self-actualization	.016	-.012	.066 ***	.057 **	.134 ***
		extrinsic rewards	-.217 ***	-.221 ***	-.175 ***	-.071 ***	-.075 ***
		power and authority	.035 **	.004	.038 **	.127 ***	.131 ***
		identification with the org.	.254 ***	.293 ***	.188 ***	.116 ***	.025
		contribution to society	.012	.028	.018	.035 *	-.030 *
adj. R <sup>2</sup>		.088	.119	.158	.164	.263	

Table 6. The number of significant effects for each work value

Job Category	challenging job			self-actualization			extrinsic rewards			power and authority			identification with the organization			contribution to society		
	+	-	n.s.	+	-	n.s.	+	-	n.s.	+	-	n.s.	+	-	n.s.	+	-	n.s.
service (N = 1130)	3	0	2	1	0	4	0	5	0	2	0	3	2	0	3	2	1	2
production (N = 542)	3	0	2	1	0	4	0	4	1	1	0	4	5	0	0	0	1	4
clerical (N = 1261)	3	0	2	1	1	3	0	3	2	3	0	2	4	1	0	3	0	2
technical (N = 669)	3	0	2	2	0	3	0	3	2	1	0	4	3	0	2	0	0	5
professional (N = 706)	2	0	3	3	0	2	0	5	0	2	0	3	3	0	2	1	0	4
management (N = 590)	3	0	2	1	0	4	0	3	2	0	0	5	4	0	1	0	0	5
sales (N = 989)	3	0	2	1	0	4	0	5	0	2	0	3	4	0	1	0	1	4
the whole sample (N=6,550*)	3	0	2	3	0	2	0	5	0	4	0	1	4	0	1	1	1	3

\*: Other job categories are also included.

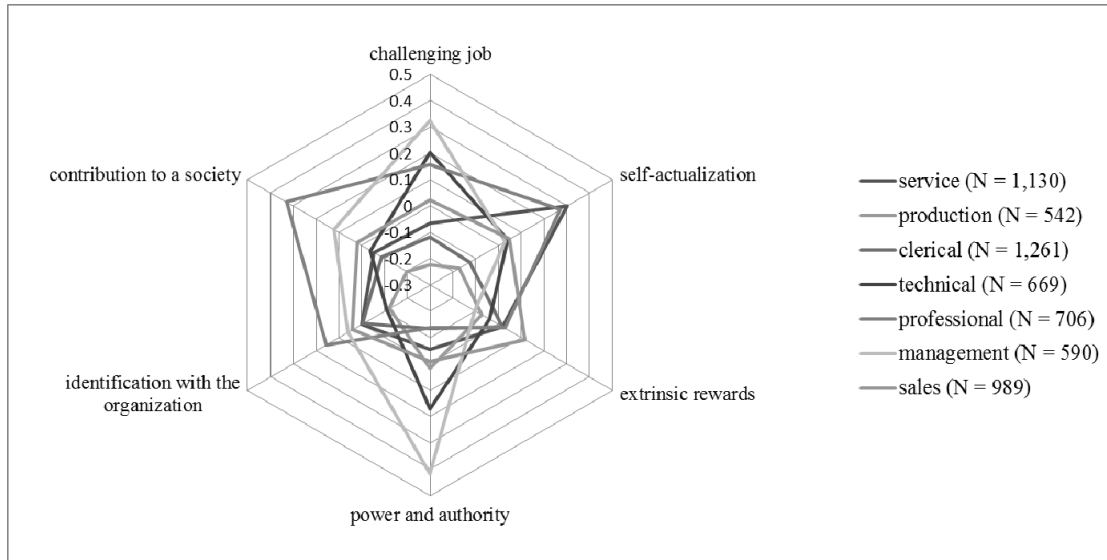


Figure 1. The cobweb chart of work values by job category