Can Human Goodness be Used as an Effective Variable in Organizational Studies? Preliminary Analysis of Data from Round 3 of the High Performance Manufacturing Project

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Abstract

This paper examines whether human goodness can be used as a variable in organizational studies. The High Performance Manufacturing (HPM) project (round 3) collected data on human goodness, although almost no academic research has utilized it empirically so far. This paper aims to clarify the essence of this human goodness by scrutinizing the contents of the questions and analyzing the data empirically. It argues that data on human goodness was collected not as an objective nature of human beings, but as a perception of the group the respondents belong to, and the possibility of its utilization is wider than expected. Further, this paper also discusses the importance of examining the relationship between human goodness and other individual or organizational variables.

Keywords: human goodness, cooperation, HPM project

Introduction

Researchers of business management are increasingly recognizing the importance of organizing a project that gathers academic researchers from all over the world in order to collect data from various sources and investigate the similarities and/or differences in business and management across various countries. The High Performance Manufacturing (HPM) project (Schroeder & Flynn, 2001) is a well-known example of one such successful academic project, in which academic researchers from all over the world participated. The aim of the HPM project was to find out major factors that determined high performance in manufacturing companies. So far, they have collected data regarding these high performance companies four times, from more than ten countries. Each time, the project used a slightly different questionnaire to collect data, ensuring that the actual data categories were not similar to each other. For example, the third time around (2005-2007), the categories were: environment, supply chain, human

resources, improvement, information systems/information technology, just in time (JIT) manufacturing and theory of constraints, manufacturing strategy, performance, quality, total productive maintenance, technology, and new product development.

The project focuses mainly on production sites, and only on individual, organizational, or human resource management (HRM) factors, in cases in which these factors are related to production factors. However, very important and interesting variables are included in these categories: organizational structural factors such as cauterization and flatness, perceptual and attitudinal factors such as coordination and commitment, and organizational process factors such as small group decision making and employee suggestion.

Among them, this paper focuses on human goodness, one of the factors considered in round three of the HPM project. Human goodness has not been considered a traditional organizational behavior variable, and there have been very few empirical studies dealing with this subject. As a matter of fact, according to the author's survey, no empirical researches dealing with "human goodness" in organizational theory and organizational behavior theory are found in academic databases such as EBSCO, Science Direct, and JSTOR.

However, prosocial behavior and organizational citizenship behavior (OCB), which are considered to be related to human goodness, have been widely discussed among researchers. Human goodness as a variable related to actual human nature or other individual factors should be considered an important topic in the study of organizational behavior. Thus, this paper aims to shed light on the contents and characteristics of human goodness variables examined in the HPM project, analyze its relationship to other individual and organizational variables, and figure out its availability in current and future studies.

General Discussion about Human Goodness

Generally, human goodness is not considered a scientific concept. Although everyone is aware of the term "human goodness," most people understand it somewhat vaguely. As a matter of fact, it is quite difficult to discuss human goodness from a scientific viewpoint, and we can only understand how people perceive human goodness emotionally, not logically.

Reading discussions on websites reveals how some people argue about human

goodness as something like an overall attribute, or as a characteristic of the person as a whole, while others discuss it as a concept closely related to altruism or helpfulness. For example, Wheatley (2010) proposed evidence that people generally have human goodness, "(we) can be incredibly generous, imaginative and open-hearted. We can do the impossible, learn and change quickly, and extend instant compassion to those in distress." Here, she considers the concept of human goodness very widely, and includes a lot of features.

On the other hand, others have considered human goodness similar to altruism. For example, on the grounds that people have more human goodness than expected, Smith (2016) refers to the research finding that eighty-five percent of respondents who were asked "if they had helped anyone during the previous week," answered they had. Further, he also argues, "we care deeply for one other, and that we would rather help our fellow beings than not," which also goes to show that he is of the opinion that human goodness is intimately connected to care for, or help to, others. Similarly, Chandler (n.d.) also starts his discussion on human goodness by saying, "(seeing) others act altruistically makes us feel connected to one another and reminds us of our shared humanity," demonstrating that he too considers the basis of human goodness as giving some benefits to others.

One characteristic that many of these researchers are persuaded of is that most ordinary people actually have human goodness, although they are very often tricked into thinking that people have only badness, not goodness because of the amount of violence in the world. People's perceptions or beliefs about human goodness fulfill an important role not only for society, but also for their own physical health. Considered practically, it is almost meaningless to persuasively discuss how much human goodness people generally have, because it cannot be verified in a scientifically reasonable way. Even so, it is important to consider the correlation between the perception that human beings have human goodness and other factors.

Human goodness has a different implication for organizational theory, depending on the kind of concept on which it is focused. If the term human goodness is considered to refer to something like attributes, or as a characteristic of human beings as a whole, the concept is rather elusive, and it might be difficult to deal with it as one of the important variables in organizational behavior theory, besides regarding it as something similar to the whole personality. However, if human goodness is considered as the basis of good relationships with other coworkers, the concept is effective in organizational behavior theory, although its relation to, and differentiation from other similar concepts such as OCB and prosocial organizational behavior in organizational theory should be discussed and analyzed empirically.

Human Goodness as a Variable

Human goodness as question items

Although human goodness is essentially associated with human nature, which is sort of vague, it is necessary to measure and collect it as data if it is to be used for empirical studies. In this context, we should focus on how the HPM project (round 3) collected data on human goodness. The project utilized six questions to gauge human goodness. Since they did not refer to other literature to create these questions, we can surmise that they are original questions created by members of the HPM project. (Questions that were created by referring to other literatures are described as such in their codebook.)

1. In my view, most employees are more concerned with personal gain than with helping our organization accomplish its goals.

This is a reverse item. The question examines how strongly motivated respondents are to contribute to organizational goals. It is closely related to OCB for the organization, which is often discussed as OCB-O (organizational citizenship behavior for the organization) (Williams & Anderson, 1991).

2. I believe that our employees are good people.

This question evaluates the human nature of employees. However, it is not clear whether the question is functional because the meaning of "good" or "good people" is too wide and ambiguous and means different things to different people. For example, for whom employees are good is very ambiguous. How can this question distinguish employees who are respectable people, but do not contribute to organizational productivity?

3. I believe that employees want to help our organization achieve its long-term goals and objectives.

This item is rather similar to question 1, although it is not a reverse item. The phrase "long-term goals and objectives," refers not only the degree to which employees have a conscious desire to advance organizational goals, but also to their ability to take the

long-term view when contributing to the organization. This might be confusing to respondents, who will need to interpret whether they are being asked about employees' consciousness or their ability.

4. Although there may be a few "bad apples," most of our employees try to help our organization achieve its goals.

People who have detrimental effects on organizations are figuratively called "bad apples" in English. This item is similar to items, 1 and 3. To put it bluntly, any organization that has many bad apples will not continue to exist for long. Therefore, the answer to this item will depend on how respondents interpret "a few."

5. Employees who aren't able to help our organization achieve its goals probably haven't been properly trained.

This item implicitly assumes that employees do not have the willingness to contribute to the organization unless they receive proper training. It also assumes that the opportunity to receive the necessary training is directly related to strong commitment and contribution to the organization with a high organizational citizenship mindset. Although some past researches reveal that proper training has a positive impact on OCB (Organ, Podsakoff, & MacKenzie, 2006), this is clearly a too simple an assumption.

6. Some of our employees are probably only out to get what they can from this organization.

This is also a reverse item. It asks about employees who act out of self-interest. The effectiveness of this question is dependent on how respondents interpret "some of."

One of the most distinctive characteristics of these questions are that they are group-level queries that ask respondents about their *work group*, not individuals. Although the concept of human goodness is originally related to an individual's attributes or characteristic features, these questions are concerned with how large groups of employees have high human goodness. Therefore, this set of questions is fundamentally different from the essential premise of OCB, which measures tendencies of individual behaviors.

Another characteristic of these questions is that they ask about respondents' perceptions or awareness of the human goodness of the group to which they belong. Even if two groups of employees were to have the same objective characteristics, their perceptions of themselves can be different. Why these perceptions differ, or what kind

of factors have an effect on perceptions should or can be discussed.

Reliability

If all six survey questions are considered, the value of Cronbach's alpha is 0.673, which means these items do not have sufficient internal reliability. However, as shown in Table 1, if the fifth question is removed, the value becomes 0.736, which is above the traditional criterion (0.7) for internal reliability. Needless to say, items should not be removed from a standard set without careful consideration, especially if they have been established in a rigorous manner, and are utilized widely in past researches. However, these questions on human goodness are newly created. It is acceptable to remove some items in order to improve the internal reliability of the remaining items and establish a more reliable set of questions.

Table 1 Cronbach's Alpha Values on Removing an Item of Human Goodness

item	1	2	3	4	5	6
alphas	0.571	0.658	0.569	0.626	0.736	0.594

As discussed above, the fifth question assumes that if employees are properly trained, they contribute to organizational goals. From the start, this assumes that all employees, or all human beings, have good consciences, and they always want to help their organization attain its goals in some way or other. Considered in this light, this item does not ask about the goodness of the respondents and their coworkers, but about how the respondents consider their own human nature, or that of human beings in general. In other words, even if a respondent answers "agree" to this question, it just means that s/he believes that all people have human goodness. Beliefs about human goodness might be affected by work environments in some way. If the respondent works in a good workplace, with excellent coworkers who have good consciences, for an extended period of time, they might gradually come to believe that employees everywhere, and people in general, have such good consciences, and thus answer "agree" to this question. If this is the case, this question is also asking about coworkers' mindsets. Reality, however, is not that simple. It is unreasonable to assume this causal relationship is always true.

To sum up these points, (1) the six original survey questions were created and proposed by HPM researchers because standard questions to measure human goodness

are not yet established. (2) Although the six original questions do not meet the standard requirement of internal reliability (Cronbach's alpha), removing one item from the analysis returned a value higher than the requirement. (3) The fifth item is not considered to measure the human goodness of employees in the workplace. Therefore, we should compose a variable of human goodness from the remaining five items by dropping the fifth question. A composite variable made from the remaining five items are utilized in the following empirical study.

The Relationship of Human Goodness with Other Variables

The original philosophical concept of human goodness is associated with individual characteristics, or personal traits. However, two important aspects of the questions created by the HPM project are (1) they are conceptualized as group-level questions, and (2) they are not intended to directly measure a sort of consciousness in one's heart, but focus instead on how much the respondents perceive or recognize that they and their coworkers have human goodness. As a result, we have to pay attention to these two specific aspects when we examine the relationship of this variable of human goodness with other organizational variables.

If we focus empirically on the relationship between the original philosophical concept of human goodness and other organizational variables, it is difficult to assume that these organizational variables have a direct impact on human goodness, because human goodness is considered an intrinsic or inherent characteristic that is difficult to change. However, if we can regard the variables as perceptual, we can assume that these organizational variables can influence "perceived" human goodness.

We have attempted to estimate the relationship between human goodness and other variables in the HPM project as follows.

Organizational structure variables

The HPM project took two organizational structural variables into consideration, centralization and flatness of organizational structure. Centralization refers to where power and authority lies within organizations, and flatness refers to the form or shape of organizations. Although they focus on different aspects of organizations, they are related to each other. Power and authority are very often dispersed in flat organizations, whereas tall (not-flat) organizations usually have top management with high levels

of power and authority. In organizations with low centralization or high flatness of organizational structure, top management delegate authority and power to lower management. This implicitly demonstrates the high confidence that top management has in employees lower in the hierarchy, which in turn causes these employees to evaluate themselves favorably. So human goodness is expected to have a negative relationship with centralization and a positive relationship with flatness.

Organizational process variables

As organizational process variables, the HPM project had employee suggestions, small group problem solving, and supervisory interaction facilitation. Small group problem solving is related to how much organizations facilitate group decision-making. Supervisory interaction facilitation is not very often seen as a variable in organizational behavior. It is the variable that measures how strongly or proactively organizations encourage their supervisors to contact and communicate with subordinates. As in the relationship with structural variables described above, if an organization, or its top management, encourages employees to offer suggestions, or make decisions on organizational matters, it means employees are highly trusted in the organization. These employees will develop beliefs on not only their ability, but also their goodness as human beings. Similarly, if an organization facilitates interactions between its supervisors and employees, employees tend to believe they are reliable to the organization. Therefore, on the whole, positive relationships between human goodness and these variables are expected.

Human resource management variables

The human resource management (HRM) variables used in the HPM project were recruiting and selection, rewards/manufacturing coordination, and task-related training. Although they are very important variables in the understanding of HRM policies and procedures of organizations, it is difficult to establish the relationship between human goodness and these variables. Although it might be too simplistic to assume that an organization's HRM policies on recruitment and rewards facilitate employees who have high human goodness to stay in the organization, it is also too difficult to conclude that there is no relationship between these variables and human goodness. On the other hand, it is nearly impossible to simply establish the relationship between task-training and

human goodness.

Self-consciousness variables

The variable of cooperation asks respondents to measure their group's willingness to cooperate. This willingness is expected to have a positive relationship with human goodness. Similarly, the coordination of decision-making is a variable that measures communication and willingness to cooperate, as opposed to decision-making and policy-related variables, and is considered to have a positive relationship with human goodness. One important attitudinal variable that was considered in the HPM project is commitment (specifically, affective commitment). However, since the questions regarding commitment were assumed to measure the attitudes of individuals, not groups, it is almost impossible to relate this variable to the human goodness of groups.

Table 2 Organizational or HRM Variables and Their Correlations with Human Goodness

variables	N. of	Cronbach's	means	standard	correlations with
	items	alphas		deviations	human goodness
Centralization	4	0.817	3.402	0.736	-0.365
Flatness	5	0.919	4.515	0.972	0.345
Employee Suggestion	5	0.874	5.241	0.607	0.323
Small Problem Solving	6	0.885	5.119	0.653	0.303
Supervisory Interaction	4	0.767	5.140	0.635	0.426
Facilitation					
Recruiting and	9	0.837	4.787	0.736	-0.365
Selection					
Rewards/Manufacturing	6	0.881	4.424	0.875	0.259
Coordination					
Cooperation ¹	6	0.777	5.793	0.425	0.415
Coordination of	4	0.791	5.324	0.621	0.404
Decision Making					

Table 2 depicts means and standard deviations of these variables and correlations of these variables with human goodness. Human goodness is composed of five variables

Cooperation originally had seven items in the HPM data. However, the 7th item, "sometimes we encourage competition among employees, in order to improve their performance" was removed because it is considered that competition and cooperation are often established simultaneously and, as a matter of fact, Cronbach's alpha is very low if all the seven items are considered.

(the fifth item was removed from the original six items). In Table 2, all the correlations are significant at the 0.01 level. All the correlations of human goodness with the other nine variables are as expected (or not unexpected).

Human goodness as a dependent variable

Human goodness can be considered to function as an independent variable, but never as a dependent variable in multiple regression analysis, because it is essentially an inherent individual characteristic or personality trait, which does not change over a short period of time. However, as described above, the human goodness variable in the HPM project does not refer to individual characteristics or personality traits, but is a kind of perceptual quality, measuring how much respondents consider themselves and their teams to have desirable human goodness for their organizations. It is possible to consider a perceptual variable as a dependent variable that is influenced by other organizational or HRM variables. So multiple regression models with nine variables above as independent variables were investigated (stepwise method with F-out = 0.05, F-in = 0.01 as criteria). Not only human goodness as a composite variable, but each of the five items were also considered as dependent variables. Table 3 depicts betas (all the values are significant at the 0.01 level), and adjusted coefficients of determination.

As shown in Table 3, centralization as an organizational variable, supervisory interaction facilitation as a HRM variable, and cooperation as a self-consciousness variable were entered in the equation with a composite human goodness variable. In contrast, some different variables were entered in the equation if different dependent variables were adopted. However, in every case, all the betas were as expected. As can be seen from this table, centralization has a negative effect on a composite variable of human goodness and item 4, and flatness positively influences item 1. So it can be deduced that organizational decentralization and flatness facilitates employees to enhance their consciousness about their organization's trust in them, which in turn increases their self-perception of human goodness. Similarly, supervisory interaction facilitation also has a positive relationship with a composite variable and several items. It shows that if organizations encourage their supervisors to have close relationships with their subordinates, those subordinates start to believe that their organizations rely on them, and also gradually increase belief in their own human goodness. Cooperation, which measures how willing respondents are to cooperate with other employees in

order to attain organizational objectives and goals, is found to have a positive effect on several human goodness variables. It is easy to imagine the strong relationship between willingness to cooperate with others and the willingness to help others. However, it is also true that we have a new task of figuring out whether or not the separation of these two variables is desirable.

Table 3 Result of Multiple Regression Analysis with (Perceived) Human Goodness as A Dependent Variable

	centralization	flatness	employee suggestion	small group problem solving	supervisory interaction facilitation	recruiting and selection
composite variable	-0.222				0.296	
1 (reverse)		0.317				
2					0.300	
3			0.210			0.184
4	-0.267				0.273	
6					0.106	

rewards/ manufacturing coordination	cooperation	coordination of decision making	adj R²
	0.228		0.293
	0.309		0.249
			0.086
	0.212		0.221
			0.169
	0.214		0.112

^{*}All the betas are significant at the 0.01 significant level.

As just shown, human goodness can be used as not only an independent variable, but also as a dependent variable. Then, it is also possible to consider the role of human goodness as a mediator that links two factors in an empirical model. For example, one likely scenario is when an organization facilitates its supervisors to communicate with their subordinates (supervisory facilitation interaction), these subordinates come to

believe they are trusted by the organization, and improve perception of their own human goodness. Finally, this human goodness enhances their commitment and contribution to the organization (organizational commitment and organizational citizenship behavior). If considering human goodness as a mediator can explain organizational behavior better than directly associating organizational policies with employee attitudes and behaviors, human goodness variables will have a higher value in empirical models.

Cooperation and Human Goodness

Among organizational and HRM variables, cooperation is considered to conceptually and empirically have a close relationship with human goodness. Thus we have to check whether these two variables should be treated separately or lumped together. Firstly Table 4 depicts the result of exploratory factor analysis (EFA) of items of cooperation and human goodness. Table 4 depicts rotation sums of squared loadings and pattern matrix when six items of cooperation and five items of human goodness are considered.

This table shows EFA produce two separate factors, each of which are related to cooperation (factor 1) and human goodness (factor 2) respectively. Although the correlation between the two factors is very high (0.535), this result implies it is desirable to consider that these two variables might be related to, but different from each other.

Next, confirmatory factor analysis (CFA) was also conducted to ascertain the relationship between these two variables. Table 5 depicts CMIN/DF, CFI, and RMSEA of two alternative models. Here, all the items regarding both human goodness and cooperation are considered to compose one variable in model 1. Model 2 considers them separately. Table 5 shows that model 2 has much better measures of goodness of fit test than model 1. From these two analyses, we conclude that even if the contents of questions about cooperation and human goodness are readable similarly, statistically they should be dealt with separately.

	rotation sums of squared loadings		
	2.898	2.715	
	Factor 1	Factor 2	
HG1		0.566	
HG2		0.427	
HG3		0.873	
HG4		0.695	
HG6		0.519	
CP1	0.722		
CP2	0.621		
CP3	0.502		
CP4	0.648		
CP5	0.483		
CP6	0.670		

Table 4 Result of Exploratory Factor Analysis

Table 5 The Result of Goodness of Fit Test by Confirmatory Factor Analysis

	model 1 (one variable model)	model 2 (two variables model)	
CMIN/DF	5.921	2.738	
CFI	0.720	0.903	
RMSEA	0.136	0.081	

Conclusion

Traditionally, the concept of human goodness has been considered philosophical or religious, and has been far from regarded as a variable of organizational behavior. Nevertheless, round 3 of the HPM project, boldly in a sense, (as this variable has seldom been used in organizational studies so far) collected data on human goodness as a variable. A leader of this project told the author of this paper that human goodness had not been utilized at all in the past, as it might have been difficult to consider concepts like goodness or badness of human beings as meaningful variables. Unfortunately, the later round of the project (round 4) did not collect data on the human goodness variable.

^{*}Promax rotation, maximum likelihood. Factor loadings over 0.400 are shown. HG means human goodness and CP means cooperation

This paper aims to reinforce the value of human goodness as a variable, although it does not mean the author disagrees with the HPM project's current policy. This paper proposes the following:

- 1. Generally, human goodness has been recognized and discussed as an intrinsic characteristic of human beings, or a concept related to, or similar to, altruism. In the former case, human goodness includes characteristics that are unconditionally regarded as good qualities such as generosity, imagination, and open-heartedness. When the latter interpretation of the concept is discussed, good relationships with others are always kept in mind. Although it might be difficult to treat the former interpretation as an effective variable in organizational behavior because of its elusiveness, the latter interpretation of the concept should be discussed and analyzed more in terms of its relatedness with some important variables in organizational behavior, such as OCB and prosocial organizational behavior.
- 2. The data regarding human goodness collected by the HPM project has two distinguishing features: One is that they are group-level variables, and the other is that they are perceptual or self-awareness related variables. The variable of human goodness has significant correlations with other organizational and HRM variables. Generally, it has significant positive correlations with variables of organizational structures and policies that prompt employees to believe in the organization's confidence in them.
- 3. If human goodness was collected as a variable related to the nature of humanity, it might be treated as an independent variable, but not as a dependent variable because it is stable at least in the short to medium term, similar to personality variables. However, as it is measured as a perceptual variable, it can also be considered not only as an independent variable, but as a dependent variable that is influenced by other organizational variables. Further, if perceived human goodness is considered to have a favorable effect on employees' attitudinal or behavioral variables, this variable might be treated as a mediator between antecedents and consequent variables in the organization. In this paper, we conducted multiple regression analyses to test the relationship of this perceived human goodness with other related variables that were collected by the HPM project. The results show that supervisory interaction facilitation and cooperation variables have a comparatively strong influence on human goodness.
- 4. The cooperation variable of the HPM project is related to the willingness of employees to cooperate or collaborate with others, and it is considered to have a close

relationship with human goodness relevant to altruism. We conducted EFA and CFA to examine whether these two variables should be treated separately or together. Results of both analyses show they should be dealt with as different variables.

As mentioned above, the data on human goodness was not collected by round 4 of the HPM project. There is very little hope that it will be collected again in round 5. The negativity toward human goodness is due not only to the fact that most researchers become entrenched in the philosophical or religious concept of human goodness, but also that questions related to human goodness are "rough around the edges," with little consideration given to their relatedness to other individual or organizational variables. This paper deals with the relationship between human goodness and cooperation, but that is not enough. The relationship between human goodness and other important factors of organizational behavior, such as organizational commitment, perceived organizational support (POS), and OCB should be considered. The HPM project however, did not collect data regarding POS and OCB. If human goodness can be regarded as OCB at the group-level, it will be desirable to use the term "group OCB" rather than "human goodness" because we are more familiar with the former term than the latter, and it is unnecessary to use a new term to refer to an already recognized concept. However, it is also undesirable to ignore or reject a potentially effective variable without examining its contents and relatedness to other variables. We should continue to focus on the human goodness variable until we get to know what it really is and how it should be used.

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