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Measuring Health Worker Motivation in Developing Countries

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Partnerships
for Health
Reform

PHR

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Mission

The Partnerships for Health Reform (PHR) Project seeks to improve people's health in low- and middle-income countries by supporting health sector reforms that ensure equitable access to efficient, sustainable, quality health care services. In partnership with local stakeholders, PHR promotes an integrated approach to health reform and builds capacity in the following key areas:

- ▲ better informed and more participatory policy processes in health sector reform;
- ▲ more equitable and sustainable health financing systems;
- ▲ improved incentives within health systems to encourage agents to use and deliver efficient and quality health service; and
- ▲ enhanced organization and management of health care systems and institutions to support specific health sector reforms.

PHR advances knowledge and methodologies to develop, implement, and monitor health reforms and their impact, and promotes the exchange of information on critical health reform issues.

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Abstract

A conceptual framework of motivation processes is presented and used to identify strategies and options for the measurement of health worker motivation in developing countries. Measures of motivation are broadly organized into determinant and consequent categories, and determinants are further distinguished in terms of measures that influence worker–organization goal congruence (“will do” motivation) and those directed toward goal striving (“can do” motivation). Strategic considerations in the use and development of measures appropriate for the target population are discussed and advantages/disadvantages of various measurement options in each category are described. General guidelines for developing a conceptually based and practically useful measurement system are offered.

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Foreword

Part of the mission of the Partnerships in Health Reform Project (PHR) is to advance “knowledge and methodologies to develop, implement, and monitor health reforms and their impact.” This goal is addressed not only through PHR’s technical assistance work but also through its Applied Research program, designed to complement and support technical assistance activities. The program comprises Major Applied Research studies and Small Applied Research grants.

The Major Applied Research topics that PHR is pursuing are those in which there is substantial interest on the part of policymakers, but only limited hard empirical evidence to guide policymakers and policy implementors. Currently researchers are investigating six main areas:

- ▲ Analysis of the process of health financing reform
- ▲ The impact of alternative provider payment systems
- ▲ Expanded coverage of priority services through the private sector
- ▲ Equity of health sector revenue generation and allocation patterns
- ▲ Impact of health sector reform on public sector health worker motivation
- ▲ Decentralization: local level priority setting and allocation

Each Major Applied Research Area yields working papers and technical papers. Working papers reflect the first phase of the research process. The papers are varied; they include literature reviews, conceptual papers, single country-case studies, and document reviews. None of the papers is a polished final product; rather, they are intended to further the research process—shedding further light on what seemed to be a promising avenue for research or exploring the literature around a particular issue. While they are written primarily to help guide the research team, they are also likely to be of interest to other researchers, or policymakers interested in particular issues or countries.

Ultimately, the working papers will contribute to more final and thorough pieces of research work, such as multi-country studies and reports presenting methodological developments or policy relevant conclusions. These more polished pieces will be published as technical papers.

All reports will be disseminated by the PHR Resource Center and via the PHR website.

Sara Bennett, Ph.D.
Director, Applied Research Program
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1. Introduction

At the most general level, human motivation refers to the psychological processes that determine the direction, intensity, and persistence of actions—more specifically, those actions *not* due solely to individual differences in ability or to overwhelming environmental demands that coerce or force action (see Vroom, 1964). As a specialty in the broader field of human motivation, work motivation refers to the psychological processes that have direct implications for individual behavior in the context of work, and in particular those processes that influence the individual's accomplishment of workplace goals and tasks. Emphasis is placed on a narrower set of person and situational factors than is considered in broader theories of human motivation. In work motivation, researchers typically examine how personality traits, values, and organizational practices influence employee actions that are regarded as critical to productivity and organizational success.

A less obvious, but perhaps more important distinction between research on human motivation and work motivation in applied settings pertains to the focus on motivation in a particular direction—that is, worker motivation to perform behaviors and strive for goals prescribed by the organization. The framing of motivation in terms of *organization-desired goals and tasks* requires the adoption of a *transactional* perspective. Among workers who perform repetitive jobs that require little thought or jobs that pay substandard wages, for example, personal and organizational goals may be unrelated or even in direct opposition to one another. Organizational goals such as perfect attendance are often of little perceived personal value to the worker. Employee adoption of, and motivation to accomplish organizational goals requires that those goals be associated with personally desired outcomes, such as a sense of achievement or monetary gain. In other words, employees must perceive a match between their own goals and those of the organization in order for the organization's goals to have a positive impact on worker behavior, and ultimately on performance. For their part, organizations often seek to enhance worker motivation through practices that bring together personal and organizational goals. Thus, in the transactional perspective, motivation for work is viewed as a result of the interaction of personal and organizational forces, rather than an attribute of the individual or the organization alone.

1.1 A Functional Approach to Worker Motivation

Worker motivation refers to an *unobservable* set of psychological processes. Measures of motivation permit assessment of the determinants and consequences of motivation, but do not measure motivation *per se*. Nonetheless, such measures are critical, because they enable organizational personnel to evaluate worker attitudes, affect, and behavior and the efficiency of programmatic efforts to enhance worker motivation and performance.

Selecting the motivation measure(s) to use in a particular context depends on conceptualization of the problem. Different theories of motivation suggest different determinants of motivation. The decision about which theoretical perspectives are most effective depends upon a systematic, functional analysis of the particular situation. That is, researchers and organizational

personnel must first (1) evaluate how characteristics of the individual, task, and environment interact to influence behavior, attitudes, and affect; and (2) how motivation relates to different aspects of worker behavior and job performance.

A functional analysis typically involves measurement of critical determinants and consequences of motivation prior to organizational intervention. The identification of key determinants and consequences is typically made in consultation with organizational personnel who are knowledgeable about workplace conditions and worker attitudes, behavior, and affect. Initial measurement can be used to test hypotheses about possible motivational determinants as well as to provide a baseline for evaluating the effectiveness of subsequent intervention programs. Results of initial analysis then aid in the selection of a more specific theoretical perspective, and they guide the ultimate choice of specific motivation measures.

For example, poor worker performance may be conceptualized as a motivational concern that results from low worker morale, job dissatisfaction, poor supervisor–employee relations, and/or inadequate incentives for effort. Through functional analysis, researchers and organizational personnel can better determine whether poor worker performance is indeed related to motivation (versus other, non-motivational problems, such as equipment problems) and the most likely determinants of worker motivation. Analysis also suggests the sources (e.g., low worker morale, pay dissatisfaction) that most likely underlie weak worker motivation and subsequent poor performance. Motivation measures are then used to examine existing attitudes as well as changes in attitudes following the organizational intervention.

1.2 Overview

This paper focuses on approaches to measuring determinants and consequences of health worker motivation in developing countries. Although a functional analysis is necessary to identify the specific factors and consequences of motivation most important for optimizing health worker motivation in particular settings, initial insights are contained in the substantial body of theory and research that exists on the general mechanisms of motivation (see, e.g., R. Kanfer, 1990). No single theory captures the universe of processes that determine worker motivation. Nonetheless, theory and research over the past four decades have become more unified with respect to the broad classes of person/situation determinants and processes by which motivation influences workplace behaviors and outcomes.

The following section describes a heuristic framework and the basic psychological processes involved. It also provides a definition of work motivation that emphasizes the basic building blocks for measuring worker motivation. Section 3 organizes motivation measures into two categories—determinants of motivation and consequences of motivation—and describes major classes of measures and measurement options for each category. The final section summarizes implications of measurement options for assessment of health worker motivation in less developed countries. Guidelines for identifying and developing context-appropriate motivation measures are offered.

2. A Heuristic Framework of Motivation

2.1 Motivational Processes

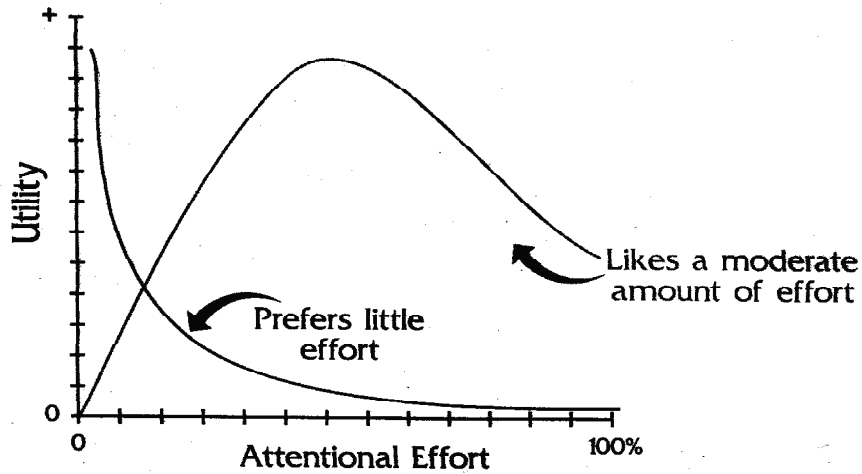
Worker motivation is best represented as a process involving two interrelated psychological systems: goal choice and goal striving (see, e.g., Gollwitzer, 1990; Heckhausen, 1991; F. Kanfer and Hagerman, 1987; R. Kanfer, 1992).

The first system, goal choice, involves the development of intentions and/or goals. Intentions and goals represent a future end-state desired by the individual and to which the individual is committed. Intentions typically describe broad end-states, such as learning a new job skill; goals more frequently define specific end-states, such as seeing X number of patients per day. Intentions and goals may refer to an individual's behavior (e.g., to attend work), or to an outcome of behavior (e.g., to earn a supervisor's praise). Commitment distinguishes intentions and goals from vague wishes or hopes. That is, commitment to a goal serves to direct an individual's attention, mobilize the individual's effort toward goal attainment, and encourage persistence to attain the goal.

At any given time, an individual may choose from among a broad range of goals that involve different courses of action (for example, attending a family gathering vs. working late). Goal choice affects the *direction* of action. Cognitive theories of motivation describe goal choice as a rational decision-making process that is determined jointly by person factors and the individual's perception of the situation. Although controversy continues about the rationality of goal choice processes, there is little disagreement about the notion that individuals select goals to maximize positive and minimize negative outcomes.

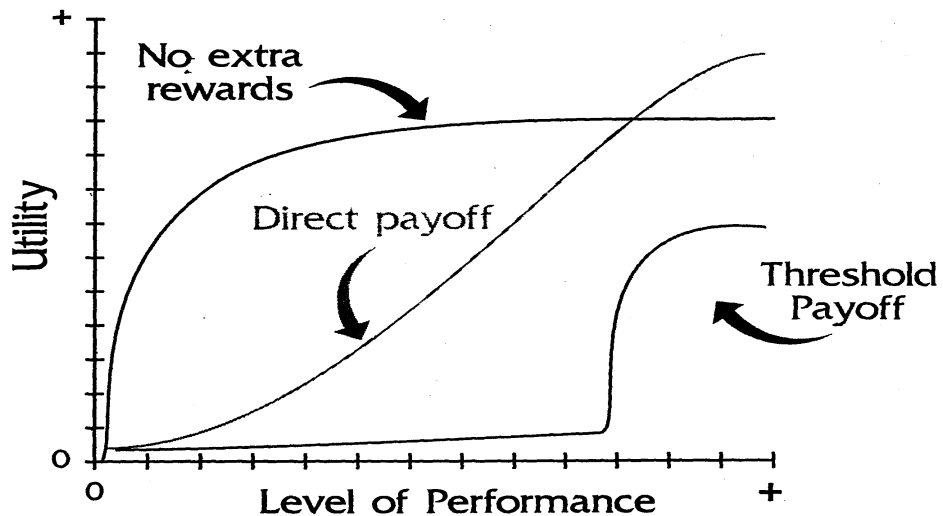
As described in Kanfer (1987; also see Naylor, Pritchard, and Ilgen, 1981), choice processes involve internal calculation of three subjective functions, or relationships. The effort–utility function, shown in Figure 1, describes how much of an individual's resources (e.g., time and effort) he/she typically prefers to expend, and the utility of under- or over-taxing the individual, vis a vis his/her preferences. For example, high-achieving workers may enjoy working at a fast pace and/or working long hours, whereas lower-achieving workers may prefer a slower pace and/or with limited hours. Individual differences in personality and social/cultural values influence the form of the effort–utility function. Worker motivation is maximized when the effort demanded by the goal matches the individual's region of desired level-of-effort.

Figure 1. Effort–Utility Function



The performance–utility function, shown in Figure 2, describes the relationship between different levels of performance (goals) and their value to the individual. Task performance may be associated with outcomes in a wide variety of ways. Often, the value of different performance goals is affected by the organization’s reward system. For example, Figure 2 shows the effects of three common reward systems on the performance–utility function. Under a salary, or fixed pay system, the utility of higher performances diminishes rapidly after achieving a threshold level of performance. In this environment, there is little external payoff for performance beyond a minimum level. Under a bonus system, higher levels of performance are rewarded only after some threshold is reached. In contrast, a piece-rate pay system, in which increased performance is associated with proportional increases in pay, provides individuals with incentives to continually enhance performance.

Figure 2. Performance–Utility Function

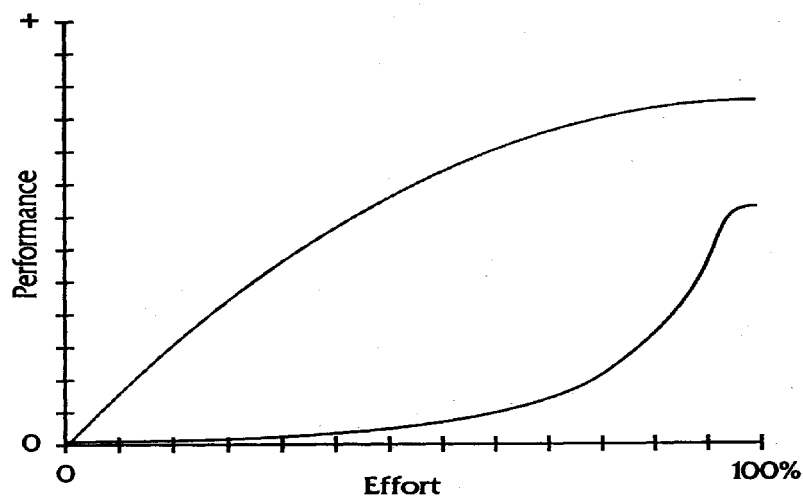


Performance–utility functions also take into account self-generated, intrinsic (e.g., non-financial) outcomes and/or social factors. Individuals engaged in tasks that involve complex skill development, such as blood testing, may perceive high levels of performance as intrinsically rewarding—that is, of high personal value even in the absence of organizational rewards for such performance. Consequently, the subjective performance–utility function would be represented by an increasing function, despite the lack of monetary rewards for higher levels of performance.

It is important to note that the performance–utility function represents the *aggregate* of worker’s perceptions of the intrinsic and extrinsic value for differing levels of performance. So, for example, although the extrinsic value—such as pay—for higher levels of performance might be negligible, the intrinsic value of higher levels of performance—such as demonstrating competence and professionalism to others—might be substantial. In such cases, organizations often develop programs that provide valued non-financial rewards, such as employee recognition awards, to motivate higher levels of performance. The intention of these programs is to positively affect performance by altering the performance–utility function (i.e., increasing the perceived value of higher levels of performance).

The effort–utility and performance–utility functions indicate the potential value of action and performance, but workers must also evaluate the amount of time and effort required for them to accomplish different levels of performance. The effort–performance function, depicted in Figure 3, provides this critical information. The form of this function enables the individual to estimate how much time and/or effort will be required to accomplish valued performance levels. Characteristics of the task and the person jointly determine the effort–performance function. For example, employees with low self-confidence may perceive the effort–performance function to be relatively flat even if the objective characteristics of the task suggest otherwise.

Figure 3. Effort–Performance Function



Goal choice models have frequently been used to successfully predict a variety of behaviors related to employee motivation, such as number of hours worked, intensity of task effort, and job intentions/turnover. Because goal choice involves individuals making decisions aimed at maximizing anticipated positive outcomes, organizations may influence an individual's goals (and motivation for work) by altering the perceived utility of engaging in organization-desired behaviors. For example, by providing bonus pay for overtime, workers who seek monetary gain may adopt intentions to work more hours per week. Conversely, organizations may unintentionally reduce motivation for work behavior by establishing pay policies that individuals perceive as unattractive for expending additional effort. For example, in collectivist cultures, piece-rate pay schedules that emphasize differences between worker's outcomes may have disutility for employees who value social affinity. Other aspects of organizational structure, such as job design (e.g., individual vs. team) and managerial practices (e.g., participative vs. assigned), have been shown to significantly alter employee perceptions and subsequent goal choice (see, e.g., Hackman and Oldham, 1980; Erez, Earley, and Hulin, 1985). A functional analysis of how organizational system components (e.g., pay, job design) align with employee values and affect employee perceptions is critical when motivational/work behavior problems can be traced to discrepancies between employee goals and organization goals.

Numerous studies show that when goals can be readily accomplished, assessing goals can yield accurate predictions of an individual's behavior (see Locke et al., 1981). However, when goals require a complex sequence of behaviors or sustained effort in the face of difficulties, additional motivational processes are needed to explain motivation. That is, although goal choice may be critical for setting the stage for high levels of motivation, the positive behavioral effects of adopting complex or longer-term work goals requires effective worker self-regulation during goal pursuit.

Goal striving refers to internal self-regulatory processes set into motion by the adoption of difficult goals. Self-regulatory processes, involving self-monitoring and self-evaluating of one's progress and self-reactions to progress, enable the employee to sustain time and effort working toward the goal in the absence of supervision and/or when faced with obstacles to goal attainment. Recent research on this striving phase of the motivational system indicates that worker self-confidence, motivational skills, and work-group practices influence how hard and long employees will continue to work at challenging goals.

From an assessment perspective, the two-stage motivation process implies two potential sources of motivational difficulty in organizations: (1) employee unwillingness to adopt the organization's goals (the "will do" component), and (2) employee competencies in sustaining intensity and persistence of goal-directed action over time, particularly under adverse conditions (the "can do" component). Observed motivational deficits may arise from either the "will do" and/or "can do" components of the motivational process.

2.2 Motivational Resources

The psychological processes described above affect worker effectiveness and productivity by influencing how workers allocate their personal resources. This section summarizes the types of personal resources affected by motivational processing.

Most researchers agree that the two major resources controlled by the motivational process are an individual's time and attentional/cognitive effort; that is, how long and how intensely an employee works at a task. In other words, individuals who maintain higher levels of work motivation—both “will do” and “can do”—are likely to devote more time, mental effort, and energy to their job tasks than persons who maintain lower levels of motivation.

Furthermore, highly committed workers may utilize other personal resources to accomplish their goals (the “can do” component). For example, workers who are in good standing with coworkers may enlist their aid to overcome an obstacle or solve a particularly difficult problem. In addition to social resources, workers may commit non-work time to develop knowledge, skills, and competencies that will help them accomplish their work goals.

2.3 Additional Concerns and Caveats

Four broad issues arise in translating work motivation theory into applied contexts. The first concern pertains to the dynamic nature of the motivation process. Worker motivation is malleable and affected by changes in the individual worker, work conditions, social environment, and/or broader social milieu. This dynamic nature implies an important caveat in the study of health worker motivation; namely, that the predictive validity of measures of “can do” and “will do” motivation taken at Time 1 may be poor at Time 2 if conditions have changed.

A second concern pertains to the assumption that motivation is neither a property of the person or the situation, but rather a consequence of the person–situation interface. As such, motivation is not something that workers “have” or that organizations “create,” but rather reflects the condition that results from the alignment (or misalignment) of worker attributes and workplace environments. Clearly, some general personality characteristics, such as high levels of achievement and conscientiousness, are desirable from an organizational perspective and are likely to facilitate the adoption of organizational goals and goal striving. Similarly, organizational practices that provide workers with clear and strong financial, non-financial, and social incentives for allocating personal resources to the job are most likely to facilitate worker motivation. In real-world settings, however, both worker motives and organizational practices vary from the ideal, and a functional analysis is needed to identify how worker characteristics and organizational practices combine to affect worker motivation. Motivation measures that assess situation or worker characteristics alone have limited utility for understanding how such characteristics interact to affect worker motivation. Worker motivation is a function of the worker's perception of the situation—not the objective situation—and the expression of beneficial worker characteristics depends critically on workers' perceptions of the prevailing contingencies.

A third caveat pertains to the notion that job performance is multiply determined and that motivation is often only a partial determinant of job performance and worker productivity. Specifically, motivation affects only those aspects of performance that can be brought under the worker's personal control. For example, when organizations fail to provide workers with critical equipment, workers may not be able to accomplish their job for reasons beyond their control. In short, motivation is not synonymous with performance, nor is performance univocally determined by motivation. A functional analysis of work goals and the means by which employees will accomplish goals is essential to ensure that performance is indeed affected by employee motivation. When work goals involve chance events or actions clearly beyond the employee's control or capabilities, organizational attempts to increase worker motivation may not only be futile, but may indeed also have a detrimental effect on worker morale, in a downward spiral or vicious cycle.

A fourth concern pertains to the frequent tendency to focus on behavioral consequences of motivation, to the neglect of cognitive and affective domains. Numerous studies suggest that motivational processes affect not only how persons behave, but also how they frame information and job satisfaction. For example, motivational influences on worker job satisfaction may have potentially important consequences for organizational reputation and employee turnover.

In summary, work motivation involves a set of psychological processes that influence the individual's allocation of personal resources toward goals that affect workplace behaviors, effectiveness, and productivity.

3. Motivational Determinants

Consistent with the heuristic framework discussed in the preceding section, determinants of worker motivation are presumed to exert their influence via worker perceptions of subjective utility and effort–performance functions. Over the past eight decades, work motivation theorists have identified seven major classes of determinants: societal/cultural values, organizational/workplace culture, personal values, personal(ity) tendencies, workplace conditions, human resource/management practices, and self-efficacy of work-relevant knowledge, skills, and abilities. As noted by R. Kanfer (1992), determinant classes of worker motivation may also be distinguished in terms of their proximity to motivational processing. Distal determinants of motivation pertain to broad, general characteristics of societies and persons. Societal/cultural values and individual differences in personal(ity) tendencies, for example, represent distal determinants of worker motivation that are generally stable and not easily altered.

In contrast, proximal determinants of motivation tend to be more malleable and often show larger effects on motivational processing. Human resource/management practices and worker self-confidence for job performance, for example, represent proximal factors that may be altered either directly or as a consequence of longer-term interventions aimed at modifying distal influences (e.g., organizational culture).

The following section discusses the major determinant classes of worker motivation in terms of their proposed effects on the “will do” and “can do” aspects of the motivational system and associated measurement options.

3.1 Determinants of the “Will Do” Aspect of Motivation

The “will do” aspect of health worker motivation pertains to worker-organizational goal congruence. As noted previously, the “will do” component sets the stage for motivational processing. Workers who perceive little or no positive utility for devoting personal resources to the accomplishment of organization-prescribed goals are unlikely to adopt work goals and they usually perform poorly in situations that call for commitment to organizational objectives. As such, workers whose goals diverge from that of the organization may perform satisfactorily in minimally demanding conditions, but poorly in situations where they must devote additional personal resources (time, effort) to goal accomplishment.

The effects of “will do” determinants of motivation accrue through their influence on two subjective functions: (1) the effort–utility function (“What is the personal value of devoting more of my personal resources to the job?”) and/or (2) the performance–utility function (“What is the personal value of achieving higher levels of job performance?”).

Societal/cultural values, personal values, and personal(ity) tendencies represent three major distal determinants of “will do” worker motivation. For example, in cultures that stress familial obligations, workers may be less likely to value or adopt organizational goals that demand overtime work. Cultural values, in turn, affect personal values, though there may be more variability in personal values as a result of unique personal histories. Individual differences in relatively stable personality tendencies, such as achievement, may also affect “will do” motivation across a variety of work situations.

In contrast to distal determinants, proximal influences on the “will do” aspect of motivation are largely environmental and under organizational control. Organizations may attempt to enhance worker motivation by making changes that alter the organizational culture and norms, and/or by enhancing workplace conditions. Examples of such interventions include organizational restructuring to encourage teamwork, management practices to provide non-financial recognition for high levels of performance, and organizational efforts to update workplace technology and tools. To the extent that workers perceive such interventions as providing more positive value for adopting organizational goals, work motivation is expected to increase.

3.2 “Will Do” Measurement Options

Individual difference measures of personality traits, motives, values, and work condition preferences are the most common measures of worker motivation pertaining to issues of goal congruence. Such measures are regarded as key determinants of perceived utility functions, and they provide general information about personality-related employee characteristics (e.g., conscientiousness, dependability) and preferences for particular types of work conditions. Most often, questionnaires provide employees with a standard set of statements and ask the employee to indicate the extent to which the statement is true of him/herself or the work environment (e.g., Likert-scale response format). Employees fill out measures individually though measures can be administered in large groups or taken home to complete. Most measures take no longer than 30 minutes to complete. Measures are scored by scale and can be aggregated to form a mean score for the work unit. In many cases, measures contain more than one scale, and different scales may be logically related to different subjective functions.

Although numerous measures of worker motives, values, and personality tendencies are available, most of these measures were created primarily for use in industrialized countries. Reliability and validity data draw almost exclusively from U.S. and European samples. Many of the measures assess individual differences in values related to the utility of working hard (work ethic) and the strength of intrinsic motives for performance. Not surprisingly, given the history of measure development in similar industrialized, individualistic cultures, no extant measure provides for explicit assessment of cultural preferences. However, in developing countries, where the employee culture may differ from that of the organization, worker–organization cultural mismatch may influence motivation through the perceived utility of effort and/or performance. For example, organizations that follow industrialized models may employ structures that reward individual behavior, even though their workers, living in a collectivistic culture, may prefer group reward systems.

For this reason, extant measures will need to be modified for use in assessment of health worker motivation in developing countries. The measures must assess the perceived value of organization

goals, work-unit goals, organization and work-unit “rewards,” and the perceived utility for allocating personal resources for different levels of job performance. Such measures will need to be developed in conjunction with local management and designed to require minimal reading skill.

3.3 Determinants of the “Can Do” Aspect of Motivation

The “can do” aspect of health worker motivation refers to motivation effectiveness, or the factors that influence goal accomplishment following goal adoption. As noted previously, deficits in worker motivation may stem from worker difficulties in successfully marshaling the personal and organizational resources necessary to accomplish their work goals. Workers who perceive that they cannot accomplish desired levels of performance are unlikely to persist when faced with obstacles or early failure. In contrast to motivational deficits associated with the “will do” aspects of motivation, workers experiencing problems in the “can do” phase are more likely to experience negative affective reactions to work, such as a sense of helplessness and hopelessness.

The effects of “can do” determinants of motivation accrue primarily through their influence on the subjective effort–performance function (“What is the likelihood that I can accomplish the desired level of job performance?”). Distal determinants of this function include worker characteristics of self-concept, work orientation, and self-regulatory skills. For example, individuals who value appearing competent are less likely to persist at tasks that suggest a lack of ability than individuals oriented toward mastery/learning.

Research further suggests that distal determinants of “can do” motivation exert their effects through the subjective effort–performance function that workers hold for various work tasks (Kanfer, Ackerman, and Heggstad, 1996). When performance objectives are regarded as highly improbable regardless of one’s effort, workers are more likely to have low performance expectations and are less likely to persist at the task.

Impediments to “can do” motivation may be personal or environmental. Tool, equipment, and supply constraints reflect environmental obstacles to goal accomplishment. Individual differences in self-regulatory skills and self-confidence may also affect “can do” motivation in tasks involving long-term perseverance. For example, workers with poor emotion control skills may become frustrated and fail to pursue a work goal when faced with initial failure. Several studies, however, suggest that worker deficits in “can do” aspects of motivation related to low self-confidence and self-regulatory skill deficits may be attenuated through training and use of various management techniques, such as goal setting.

3.4 “Can Do” Measurement Options

Similar to “will do” measures, measures of self-concept, work orientation, self-confidence, and self-regulatory skills provide organizations with an aggregate “snapshot” of worker characteristics and perceptions of effectiveness in marshaling resources during goal striving. The best known measures address employee self-efficacy; namely, the individual’s confidence in his/her capability for successfully mobilizing resources to accomplish the goal. These measures are typically custom-

designed and ask workers to indicate their confidence for accomplishing increasing difficult levels of performance using a 1–10 scale. Other measures, such as self-concept measures and self-regulatory measures, ask workers to indicate their agreement with statements pertaining to skills in content (e.g., medicine) and process (e.g., emotion control) domains

Measures of perceived organizational or workplace constraints on performance accomplishments have also been developed. Again, however, such standardized paper-and-pencil, self-report measures will likely be of limited utility in the developing country setting. Custom measures of worker's performance expectations and perceived obstacles to performance accomplishment are required.

4. Motivation Consequences

As noted previously, motivation has consequences for worker behavior, affect, and conditions. Behavioral consequences are considered the most direct indices of the motivation process. Behavioral measures permit assessment of the direction and intensity of action. In contrast, affective and cognitive consequences are indirect indices of motivation. For example, measures of affective consequences, such as job satisfaction, permit assessment of motivational responses that may, in turn, affect attendance and turnover. Measures of cognitive consequences, such as organizational commitment, facilitate understanding of how workers perceive organizational support systems. This section discusses characteristics and options within each class of consequences.

4.1 Behavior

Behavioral measures of health worker motivation may be obtained in a variety of ways. Quantity, quality, time, and performance measures of motivation are typically customized to the work environment and involve quantification of time spent on-task or level of task-directed effort allocated per unit time. Examples include number of hours spent in surgery, quality of communication with patients, number of daily blood draws, frequency of patient contacts, quality of clerical work, and number of hours spent writing reports. Simple behavioral measures are most useful in environments where performance is easily quantified. When performance is complex, largely unobservable, involves learning, and/or is a group effort, behavioral measures of time, attentional effort, and errors may not always be accurate indicators of employee motivation.

Direct observation of worker behavior permits moment-by-moment data on the direction and intensity or frequency of different work behaviors. To capture data, observers typically use a behavior observation scheme that categorizes behaviors and enables observers to rapidly record behaviors by type and duration. Although direct observation can provide a rich source of data about worker behavior, such methods are labor-intensive and require rater training to ensure reliability in ratings.

Behavioral measures can also be obtained through the organization's archival records. In many organizations, archival data is maintained on worker performance ratings, attendance, and disciplinary actions. Although archival data are less labor-intensive to obtain than direct observations, such records are often incomplete or inaccurate.

Supervisor, peer, and patient ratings of worker job performance provide a third major source of behavioral measures. Such measures are more cost-effective, but they provide less detailed behavioral information than do direct observation measures. In addition, their validity depends critically on the extent to which the performance rating is based on worker behaviors rather than non-specific judgments.

In general, behavioral measures that assess the direction and/or frequency of worker behaviors, the amount of time and/or effort devoted to work, and work tasks are desirable for a number of reasons. First, such measures enable researchers and organizational personnel to quantify what workers do and how aspects of behavior relate to job performance and productivity. Second, when contemplating an organizational intervention to enhance worker motivation, pre- and post-measures of worker behavior permit evaluation of the effectiveness of the intervention program. Third, these measures are often useful for understanding behavior–performance linkages and for identifying training needs. For example, among x-ray technicians, behavioral measures that indicate long periods of time spent on machine set-up might suggest additional worker training on equipment use.

Unfortunately, direct observation measures are rarely practical in real-world settings. Job performance ratings provide an attractive, less costly alternative, particularly when job ratings are made using a standardized format that requires frequency ratings using explicit behavioral dimensions. Job ratings are typically customized to the organization and work-unit, and when implemented for the purpose of motivation assessment, may be designed specifically to incorporate ratings on direction, frequency, and time spent on different tasks. The measures should be simple, behaviorally anchored, and able to reduce error variance associated with use of non-work related information.

The manner in which behavioral measures are obtained may also affect their validity as indices of motivation. Work attendance or punctuality, for example, may be assessed by self-report, supervisor observations, or through archival records. Systematic error may be introduced in each method due to poor recording methods or failure to identify non-motivational determinants of the behavior (e.g., illness). The reliability of behavioral measures for assessment of work motivation further depends upon the level at which data are aggregated. In field settings, aggregation over time or using multiple measures will enhance reliability.

4.2 Affect

Individual differences in affective consequences of motivational processes provide information on workers' affective reactions to work. Although a large number of affective consequences could be included in this category, the most frequently studied construct is job satisfaction.

There are many measures of job satisfaction, ranging from one-item measures of overall job satisfaction to multiple-scale measures of satisfaction with specific facets of the job: pay, supervision, etc. (see Cook et al., 1981; Price and Mueller, 1986). In the context of health care worker motivation in developing countries, the potentially most useful measures are facet satisfaction measures, because such measures permit differentiation of affective consequences to various aspects of work. Among the facet measures of job satisfaction, the most widely known and validated measure is the Job Descriptive Index (JDI) (Smith, Kendall and Hulin, 1969; an updated version of the JDI is also available). This short, easy-to-administer, self-report measure provides assessment of job satisfaction along five dimensions; Pay, Promotion Opportunities, Supervision, Co-workers, and Work Conditions. Employees are asked to indicate whether the evaluative words (items) describe their work. There is extensive research supporting the reliability and validity of the measure, as well as construct validity evidence for several foreign language translations of the scales.

In general, measures of job satisfaction are paper-and-pencil, self-report measures. Such measures may be particularly useful for understanding worker value of discrete organizational support systems, such as benefits or recognition programs. Affective measures may also be used to indicate motivational consequences on worker loyalty to the organization and organizational citizenship.

4.3 Cognitions

Motivational processes are also posited to affect worker beliefs and attachment to work. Measurement of worker beliefs about subjective utility functions are typically obtained through paper-and-pencil, self-report measures that are customized to the organization and problem under study. For example, Pritchard et al. (1988, 1989) have developed an organizational intervention protocol that aims to enhance productivity through a combination of methods, including measurement of worker beliefs about subjective utility functions. In this program, measures are tailored to fit the specific work unit or job task. For example, using this method to assess the effort–performance function among nurses, it is first necessary to identify major work tasks and an appropriate and specific range of performance levels for each task. Statements are then written that ask workers to indicate the perceived amount of time and/or effort required to accomplish each performance level. Responses are typically aggregated by work unit to determine the effort–performance beliefs for the group. A similar procedure is followed for assessment of performance utility beliefs.

The measurement of worker beliefs in this framework permits organizations to more easily identify motivational problems and correct erroneous worker beliefs. However, the precision of measurement requires substantial time, organizational commitment, and worker acceptance.

Alternatively, measures of job involvement, job alienation, and job morale may be used to assess more general worker beliefs about the perceived value of their job. Several brief, self-report measures have been developed to assess these constructs (see Price and Mueller, 1986, for examples). For example, the three-item job involvement measure contained within the Michigan Organizational Assessment Questionnaire provides an overall index of employee identification with their work. Kanungo's (1982) 20-item measure of alienation–involvement provides scale scores on both job (specific) and work (in general) involvement.

5. Summary of the Motivation Measurement Domain

The theoretically driven, heuristic framework of motivational processes provides the foundation for organizing measures of worker motivation in terms of whether they assess factors that influence motivation processes (determinants) or assess the consequences of motivation processes. In the determinant category, a further delineation is made between factors and associated measures that affect worker willingness to adopt organizational goals (“will do” motivation) and those that affect worker goal accomplishment (“can do” motivation). In the consequences category, measures are distinguished in terms of whether they assess worker behavior, affect, or conditions.

Unfortunately, few well-validated measures of worker motivation appear appropriate for direct use in assessing worker motivation in developing countries. Individual difference measures of motives, values, personality, and job satisfaction have broad generalizability and should be considered for use in assessing person determinants of “will do” motivation and affective consequences, respectively. In many instances, however, these measures will likely need to be shortened, simplified, and expanded to include content areas important in developing countries.

For the remaining set of influences and consequences, researchers will need to develop local measures in conjunction with organizational personnel. Self-report measures of cultural incentives for the way that work is organized, rewarded, and performed; multiple and potentially conflicting constituency incentives for behavior; self-efficacy for job performance; self-regulatory skills for goal accomplishment; and perceived environmental constraints on performance are needed. All new measures should be developed in line with basic psychometric principles of reliability and validity. Multiple, behaviorally based measures of motivation outcomes can be created using existing organizational data and regular monitoring of key performance dimensions.

5.1 Future Directions: A strategic guide

Persons interested in assessing health worker motivation in developing countries face a wide array of choices with respect to what to measure and how to measure indices of worker motivation. The following suggestions are offered to guide worker motivation assessment efforts in applied contexts.

- ▲ Conduct a functional analysis of motivational concerns to identify the appropriate determinant and outcome measures.

What are the observable pathways by which worker motivation affects job performance, effectiveness, or productivity?

Which determinants of motivation appear most influential on motivational processing?

- ▲ Distinguish motivational concerns related to goal incongruence (“will do” motivation) from worker difficulties in goal striving (“can do” motivation).

Goal incongruence concerns—implications for personnel selection practices and organizational practices to promote performance

Goal striving concerns—implications for worker training, alteration of work conditions

- ▲ Measure key determinants *and* outcomes at the same level of generality/specificity

Distal versus proximal measures

- ▲ Build new measures in adherence to basic psychometric principles

Are new measures reliable?

Are new measures valid indicator of construct (do they measure what is intended)?

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